

A STUDY IN
THE COINAGE
OF THE MAMERTINES

BY

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Amanuens at the University Library, Lund, Sweden



WITH FIFTYFOUR PLATES

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Gift

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PREFACE

With the exception of E. Gabrici's *La monetazione del bronzo nella Sicilia antica*, 1927, and M. Bahrfeldt's *Die römisch-sicilischen Münzen aus der Zeit der Republik* (*Revue suisse de numismatique*, XII, 1905) with *Eine Nachlese* (*Schweizerische numismatische Rundschau*, XXIV, 1927), no thorough investigation has been made of the Sicilian bronze coinage. The reason why I came to deal in this field with the Mamertine coinage was that I had taken as my starting-point some preliminary studies of the part played by the Italian mercenaries in Sicily before the arrival of the Romans in the island. In these studies my interest was roused by the most important archeological remains of their sojourn in the island, viz. the coins issued by these mercenaries after their settlement in Sicily. Following the study of the Campanian coins in Entella and Nakone and those issued by other Campanians in Sicily, a brief report of which I hope to be able to publish shortly, my attention was mainly directed to the most important coinage by the Italians in Sicily, the Mamertine issues in Messina. When I began gradually to collect material it was my intention to form as complete a Corpus as possible of this interesting coinage, which has been but little studied so far but which is of importance for the understanding of Sicilian numismatics in the third century B. C. The political situation at present prevents this from being carried out and in working out this study I have had to content myself with the material hitherto collected, which originates from

the public and private collections mentioned on pp. XIII ff. It was collected partly by correspondence and partly during two journeys, one to Italy in the winter of 1937—38, visits being made especially to public and private collections in Sicily, the other to Germany and Austria, Italy and Switzerland in the spring of 1939. A projected journey to Paris and London in the winter of 1939—40 had to be put off owing to the outbreak of the War. I hope, however, that the material contained in the Catalogue and in the Tables of Weights will furnish a general idea of the Mamertine coinage, and that it will be of value in future attempts to create a clear understanding regarding the metrology and chronology of the Sicilian and south Italian as well as of the Roman coins during the third century B. C. and possibly also to some extent during the following two centuries.

Before passing on to the discussion of the subject, I have the pleasant obligation of thanking all those who have so generously helped me in the collection and treatment of the material for this study. First of all I wish to express my sincere thanks to my former teacher, Prof. Martin P:n Nilsson, who led me into this subject, to my present teacher, Docent Natan Valmin, and to Prof. Sture Bolin, who have taken great interest in the progress of my work. Further, I wish to thank my colleagues at the University Library (Lund), and especially Dr. Gunnar Carlquist, Chief Librarian. I also wish to record my indebtedness to the staff of the Historical Museum (Lund), and especially to its ancient Director, Prof. Otto Rydbeck, and to its present Director, Prof. John-Elof Forssander, and to the staffs of the museums recorded on pp. XIII ff., for their great kindness in procuring material, among whom I must mention Superintendent Georg Galster and Intendent Niels Breitenstein (Copenhagen), Prof. Ettore Gabrici (Palermo), Prof. Guido Libertini (Catania), Prof. Giuseppe Cultrera (Syracuse), Dr. A. Engeli (Winterthur), and to three Sicilian private collectors, who showed me great kindness, Dott. Agostino Pennisi, Barone di Floristella

(Acireale), Barone Gabriele Chiaramonte-Bordonaro (Palermo) and Dott. Ing. Domenico Ryolo, Barone di Bordonaro (Milazzo).

Further, I wish to thank my parents for their help in controlling the weights — I am also indebted to my mother for the small drawings found in the work.

I have also to thank Mr. Owen Morton, who has translated the work into English (for the Catalogue I am myself responsible), and *Hofintendent* John Kroon, Malmö Grafiska Anstalt, for much valuable advice.

I also wish to record my indebtedness to Humanistiska Vetenskapssamfundet (Lund) and to the Historical Museum (Lund) for granting me a sum for photographs and for plaster casts.

Lund, Mai 1940

M. S.

The plaster casts from Berlin were photographed by Cesare Faraglia (Rome), those from Milan, Munich, Naples, Stockholm, Syracuse, Vienna, Chiaramonte-Bordonaro, Pappalardo and Pennisi were photographed by Malmö Grafiska Anstalt; of the other coins, reproduced in the Catalogue, photographs were obtained from the respective museums and collectors. The photographs of nos. 356 and 371 are taken from Babelon, *Catalogue de la Collection de Luynes. Monnaies grecques*, I, 1924, while no. 379 is derived from Gabrici, *La monetazione del bronzo nella Sicilia antica*, 1927.

The plates and the blocks for the drawings and legends were made by Malmö Grafiska Anstalt.

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ABBREVIATIONS

- AMIIN *Atti e memorie dell'Istituto italiano di numismatica.*
Roma.
- Berl. Bl. *Berliner Blätter für Münz-, Siegel- und Wappenkunde.*
Berlin . . .
- BMC *A catalogue of the Greek coins in the British Museum.*
London.
- C. VIII Christian VIII Collection.
- CIL *Corpus inscriptionum Latinarum.* Berlin.
- RE *Realencyclopädie der classischen Altertumswissenschaft*
(Pauly-Wissowa-Kroll).
- RIN *Rivista italiana di numismatica e scienze affini.* Milano.
- SNG *Sylloge nummorum Graecorum.* London.

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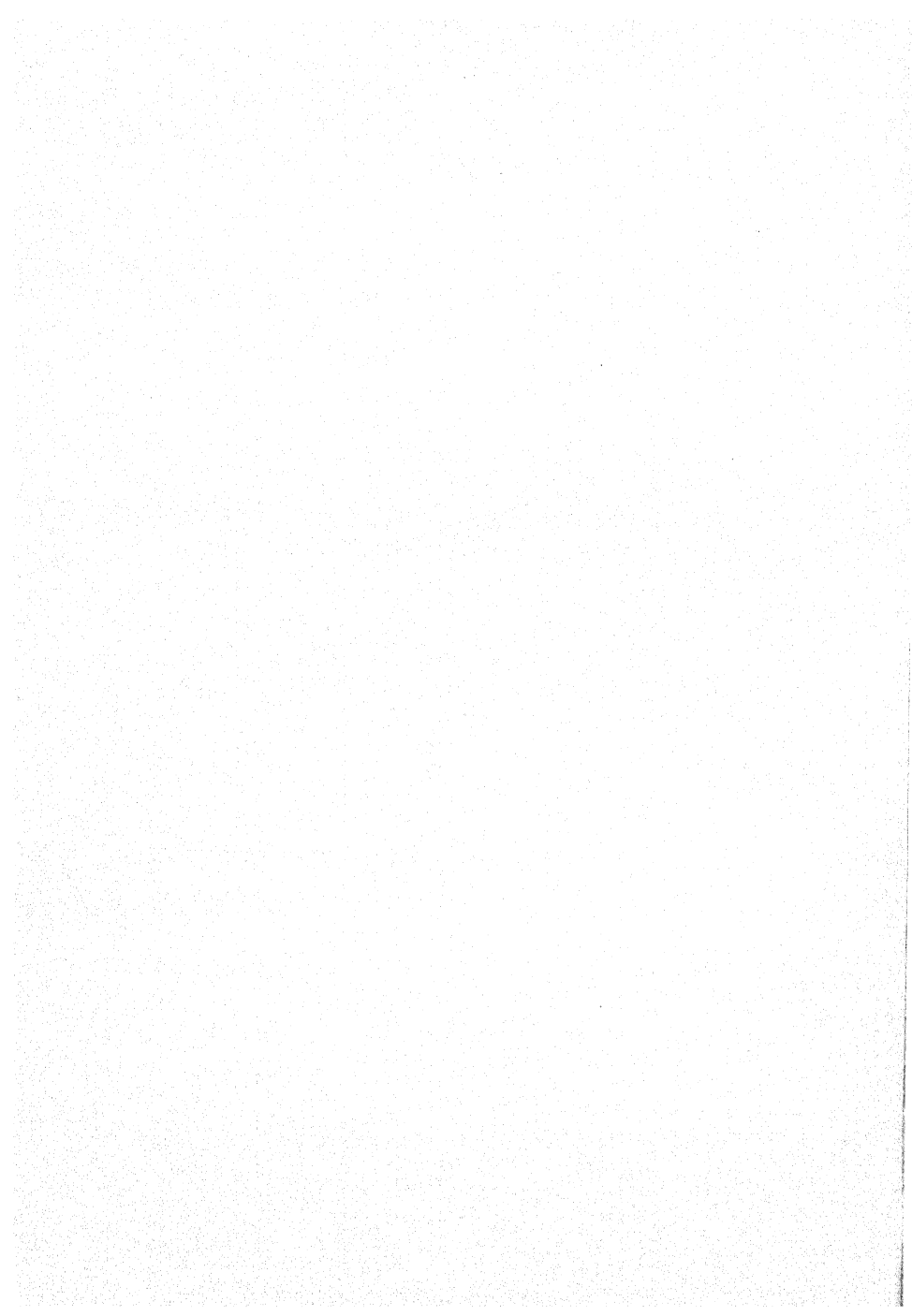
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¹ It is to be regretted that no coins are represented from the extensive Grosso-Cacòpardo Collection in the R. Museo Nazionale at Messina, a collection containing, according to a preliminary examination by Paolo Orsi, especially coins from Zancle, Messina and the Mamertines; among the 1345 bronze coins that the entire collection contains the Mamertine coins are probably well represented. It is not, however, accessible at present. Cf. Orsi, *Il Medagliere Grosso-Cacòpardo al Museo Nazionale di Messina*, AMIIN VII, 1932, pp. 165 ff.

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Winterthur. Städtisches Museum.

B. Private Collections

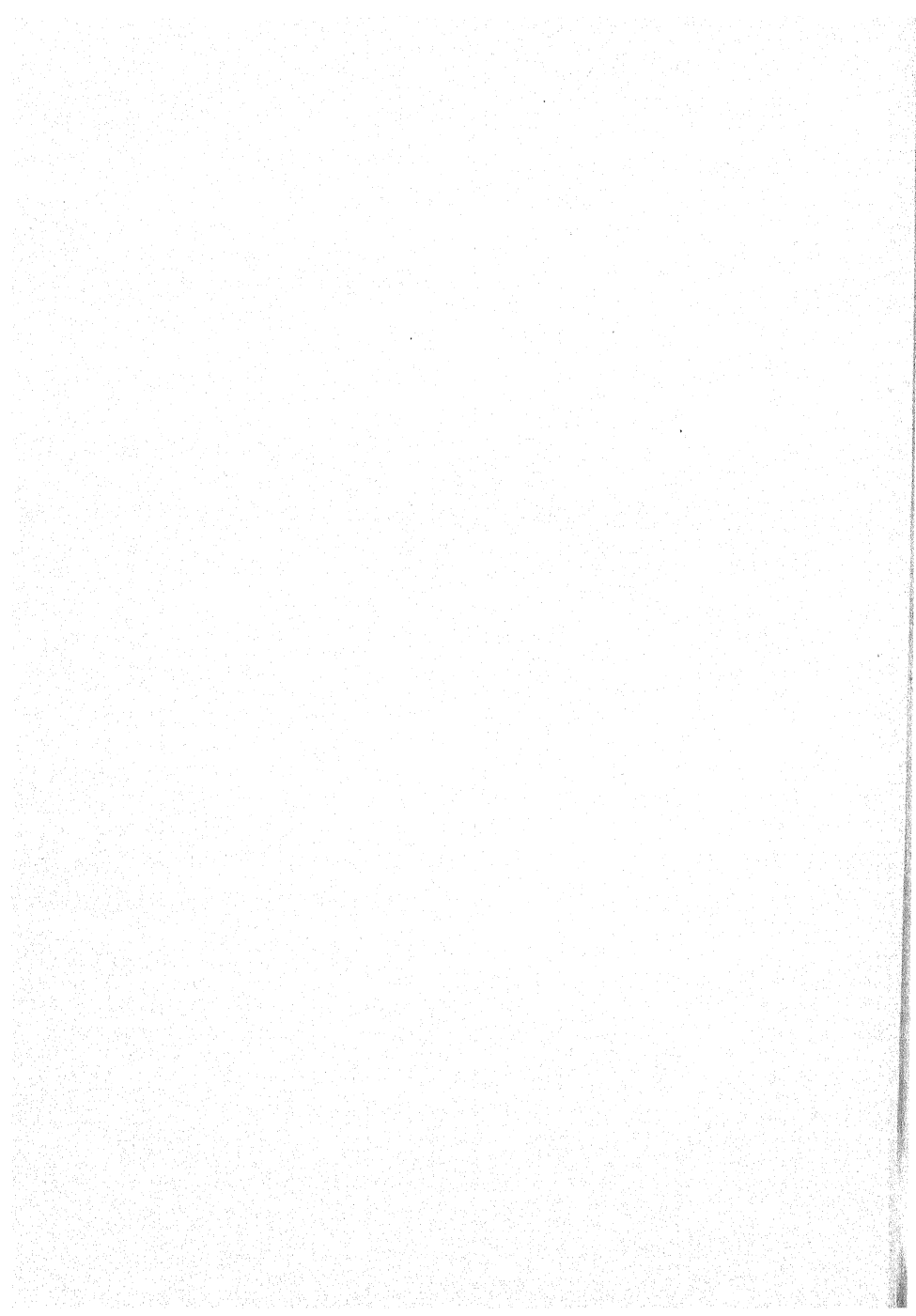
Chiaramonte-Bordonaro. Barone Gabriele Chiaramonte-Bordonaro.
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INTRODUCTORY

During the first half of the third century B. C. Messana was to experience the same fate as that which had already befallen at least two Sicilian cities and probably others as well, of which we have no knowledge, i. e. they were to fall under the sway of Italian mercenaries. That fate had already befallen the Elymian city of Entella and the city of Nakone, known only for its coins, both of which were situated in the western part of Sicily. That other places were also occupied by Campanian and even by Tyrrhenian mercenaries is evidenced by other coins, the place of issue being, however, as yet unknown.¹ What befell Entella and Nakone, however, did not, as shown by the coinage, leave any deep impression on the cultural life of these two cities, for the particular Campanian character of their coinage disappeared comparatively early and gave way to Carthaginian and Syracusan influence. The effect of the settlement of these mercenaries among the Greek and native populations of Sicily may have been transient, and the two cities, which we know were populated for some time by Campanians, were insignificant. The incident, however, is symptomatic and portends a time when the Greek and the native populations become mixed with the people from Italy, and when Greek culture is supplanted by that of the latter. A more important event, more permanent and more fateful, in the history of Sicily, however, was the occupation of Messana by the Samnite mercenaries, the so-called

¹ Cf. Holm, *Geschichte Siciliens im Alterthum*, III, pp. 666 ff., cf. p. 662; Head, *Historia numorum*², pp. 119, 130, 137, 159, 190; Giesecke, *Sicilia numismatica*, pp. 81 f., 85 f.; Gabrici, *La monetazione del bronzo nella Sicilia antica*, pp. 63, 74 f.

Mamertines. This implied that Messana ceased to be a Greek city, acquiring at once an Italian population and an Italian culture, where together with the Greek language Oscan was spoken and where the highest office of the city was the Oscan »meddix» — an Italian city on Sicilian soil, which indirectly prepared the way for the spread of Roman-Italian culture to Sicily and which was the direct cause of the Roman conquest of this island.

Little is known, however, of Messana under the rule of the Mamertines. The literary data are few and refer chiefly to the period before the arrival of the Romans in Sicily.² The archaeological and epigraphic sources are limited to a few inscriptions and brick dies.³

Although this investigation is only intended to deal with the Mamertine coins, we may be justified by way of introduction in touching upon some facts known through these sources about that society which put these coins into circulation.

1. Origin of the Mamertines.

It should be noted that the name Campanians given to the Mamertines, which we occasionally come across in the litera-

² Diodorus, XXI, fr. 18, XXII, fr. 1:2—3; 7:4; 13, XXIII, fr. 1:2—3; Polybius, I, 7 ff., III, 26, 6; Cassius Dio, fr. 40, 8, 11; 43, 5, 10; Zonaras, VIII, 6 ff.; Alfius in Festus, 158 (M.) Mamertini; Strabo, VI, 268; Cicero, *Verr.* II, II, 5, 13, III, 6, 13, V, 17 ff.; Plutarchus, *Pyrrh.*, 23 f., *Pomp.*, 10; Dionysius Halicarnassensis, XX, 4; Appianus, *Samn.* 9. Cf. Holm, *Geschichte Siciliens im Alterthum*, II, pp. 277 ff., 485 ff., III, pp. 7 ff.; Mommsen, *CIL*, X, pp. 713, 716; Meltzer, *Geschichte der Karthager*, II, pp. 225 ff.; Pais, *Storia di Roma durante le guerre puniche*, I, pp. 92 ff.; Beloch, *Griechische Geschichte*, IV, 1, pp. 542 f., 552 ff., 643 ff.; Griffith, *The Mercenaries of the Hellenistic world*, pp. 202 ff.; Philipp, *Mesene*, *RE* XV, 1226 ff.; Kroll, *Mamertini*, *RE Suppl.* VI, 240. Compare also the literature concerning the Mamertine coins.

³ Cf. Planta, *Grammatik der oskisch-umbrischen Dialekte*, II, p. 492, 1—3; Conway, *The Italic dialects* . . ., I, p. 1 f.; Buck, *Elementarbuch der oskisch-umbrischen Dialekte*, p. 152 f.; Orsi, *Monumenti antichi*, XXIV, 1916, 193 ff., fig. 46, 47.

ture,⁴ is not correct, for the Mamertines were Samnites, who certainly did not originate from Campania. The name Campanians is taken from Polybius,⁵ who states that the Mamertines were Campanian mercenaries in the service of Agathocles. Diodorus does not call them Campanians. He says that the Mamertines were mercenaries who had been expelled from Syracuse after the death of Agathocles and that in their language Ares was called Μάρμερος, i. e. Mamers.⁶ Consequently they spoke the Oscan language. Diodorus does not speak of Campanians in the service of Agathocles but of Samnites.⁷ This is rather surprising, for the Campanians were the most conspicuous mercenaries in Sicily during the fourth century B. C. in the service of both Syracuse and Carthage. Taking into consideration that Diodorus probably obtained his information about the Campanians as well as about the Samnite mercenaries in the service of Agathocles from the same source, i. e. from Timaeus,⁸ one is inclined to draw the conclusion that there were no longer any Campanian mercenaries in Sicily and that they had been succeeded by Samnites from other parts of Italy. Further, having regard to the fact that the Campanians came under the government of Rome about 334 B. C., which makes it still less probable that they entered the service of foreign states as mercenaries after this time, it seems likely that Diodorus' statement that the mercenaries fighting among the troops of Agathocles were Samnites but not Campanians accords well with the actual facts and that the Mamertines are identical with the Samnite mercenaries mentioned on a few occasions among the troops of Agathocles.

There is therefore every reason to doubt the correctness of Polybius' statement that the Mamertines were properly speaking

⁴ Cf. Griffith, p. 202.

⁵ I, 7, 2; 8, 1; cf. Dionysius Halicarnassensis, XX, 4, 8; Cassius Dio, fr. 40, 8; Zonaras, VIII, 8; Strabo, VI, 268.

⁶ XXI, fr. 18, 1.

⁷ XX, 11, 1; 64, 2.

⁸ Cf. Laqueur, *Timaïos*, RE R2: VI, 1162 ff.

Campanians. He seems to have derived his information from Fabius Pictor.⁹ Being aware of the Oscan origin of the Mamertines, Fabius may have intentionally called them Campanians in order to emphasize the parallelism between the occupation of Messana by the Mamertines and that of Rhegium by the Campanian troops in the service of Rome.¹⁰ The Samnite origin of the Mamertines is also confirmed by the legend cited by Festus¹¹ from Alfius.

The theory that the Mamertines originated from the Μαμέρτιον, mentioned by Strabo,¹² was advanced by Goltz already in the 16th century and was also adhered to by numismatic writers in the following centuries.¹³ The name Mamertines¹⁴ is certainly not ethnical, for as pointed out by Oldfather, it is improbable that all the mercenaries that took possession of Messana came from the small city of Mamertion.¹⁵ The fact that Diodorus does not employ this name for the Samnite mercenaries before their arrival at

⁹ Cf. Beloch, *GG*, IV, 2, pp. 11, 481.

¹⁰ Cf. Polybius, I, 7, 1 ff.

¹¹ 158 (M.) Mamertini.

¹² VI, 261; cf. Stephanus Byzantinus.

¹³ *Sicilia et Magna Graecia* ..., I, 1576, p. 271; cf. Pellerin, *Recueil de médailles de peuples et de villes* ..., I, 1763, p. 53 f.; Magnan, *Bruttia numismatica* ..., 1773, p. VII, Pl. 39—50. Later still more theories have been put forward on this subject. Cf. Capialdi, *Sulla Mamerto Brezia* ..., pp. 1 ff.; Kroll, *Mamertini*, *RE Suppl.* VI, 240; as regards this Mamertion, identified with Oppido, at present Oppido Mamertina, v. Capialdi, o. c.; Oldfather, *Mamertion*, *RE* XIV, 952; Wikén, *Die Kunde der Hellenen von dem Lande und den Völkern der Apenninenhalbinsel bis 300 v. Chr.*, p. 152. Concerning the Mamertium mentioned by Orosius (V, 9, 6) see Schäfer, *Jahrb. f. Philol. u. Paed.*, 1873, p. 70 f.; Ziegler, *Mamertium*, *RE* XIV, 952.

¹⁴ The name Mamertines (Greek Μαμέρτινοι, Lat. Mamertini; the legends on the coins are as a rule in Greek: ΜΑΜΕΡΤΙΝΩΝ [once ΜΑΜΑΕΡΤΙΝΩΝ], on some in Oscan: ΜΑΜΕΡΤΙΝΟΥΜ) comes from Mamers, -ertis, the Oscan name for Mars. Cf. Festus, 158 (M.) Mamertini, 131 (M.) Mamers; Conway, *The Italic dialects* ..., I, p. 219 etc. (Diodorus, XXI, fr. 18, 1: Μάμερτος). According to Diodorus (XXI, fr. 18, 1), the city of Messana was called Mamertine, but this occurs only here.

¹⁵ *RE* XIV, 952.

Messana indicates that at that time they did not officially bear the name of Mamertines. The tradition, recorded by Diodorus, is probably true, that the Mamertines adopted this name after their god Mamers on their arrival at Messana, Mamers, as appears from the oldest coins, being their national deity.

Once or twice in modern literature we come across the view that the Mamertines were identical with the Campanian mercenaries that had previously invaded Sicily. This opinion is expressed by Mirone,¹⁶ and Giesecke, too, seems to have taken the same view.¹⁷ As evidence against this opinion I can only point to the above-mentioned statement of Diodorus, which makes it probable that these mercenaries were Samnites in a proper sense and not Campanians, and moreover to the fact that these troops were expelled from Sicily and consequently did not have their homes there, to which they could return after the death of Agathocles. But the best proof is furnished by the coins, which do not show any connexion with the increasingly hellenised Campanian coins of Entella and Nakone or with the other coins ascribed to the Campanians in Sicily. At first the Mamertine coins bear witness of a strictly individual taste, which may be described as barbarian and primitive, and cannot have been struck by the descendants of these Campanians, who were by this time entirely hellenised.

2. Arrival at Messana.

The year in which Messana fell into the hands of the Mamertines is not known.¹⁸ The upper time-limit is 289 B. C., the year

¹⁶ Mirone, *Rev. num.* 1920, p. 12: Il ne faut pas oublier, au reste, que la ville d'Adranon, à l'époque de Timoléon, était la principale place forte des Mamartins, tous voués dès l'enfance à Mamers, c'est-à-dire à Mars; c'est en souvenir de cette origine qu'ils ont placé l'image du dieu guerrier Adranos sur le droit de leurs monnaies.

¹⁷ *Sicilia numismatica*, 1923, p. 84.

¹⁸ Beloch, *GG*, IV, 1, p. 543, note 1.

in which Agathocles died, and the first time that the Mamertines at Messana are mentioned is in connexion with the revolt of the Campanians in Rhegium, which took place, according to Beloch, about 280 B. C.¹⁹ The events at Syracuse, related by Diodorus, and the resulting expulsion of the mercenary troops could not, however, have occurred very long after the death of Agathocles, and we are probably near the truth if we fix the date of the capture of Messana by the Mamertines at about 288 B. C.²⁰

3. Historical survey.

Our knowledge of the external history of the Mamertine state is essentially restricted to the 24 years, approximately, during which the Mamertines were able to maintain their position as an independent state, i. e. up to the arrival of the Romans in Sicily in 264 B. C., thus at the outbreak of the First Punic War.

We know that the Mamertines were allied to the Roman troops in Rhegium, consisting mainly of Campanians, which had been placed there under the leadership of Decius, the Campanian commander, for the protection of the city during the Pyrrhic War. These troops had revolted and following the example of the Mamertines made themselves masters of the city, which they ruled as their own for about 10 years, i. e. from about 280 to 270 B. C.²¹ The two cities, whose masters were of a kindred race, seem to have succeeded in retaining their position against Pyrrhus and to have barred his way across the Strait of Messina.²² In alliance with Carthage²³ the Mamertines fought against Pyrrhus

¹⁹ Cf. IV, 2, pp. 479 ff.

²⁰ Cf. Holm, II, p. 486; Meltzer, II, p. 543, note 38.

²¹ Polybius, I, 7; Dionysius Halicarnassensis, XX, 4; Cassius Dio, fr. 40, 7; cf. Beloch, *GG*, IV, 1, p. 545; IV, 2, pp. 479 ff., *Römische Geschichte*, p. 473 f.

²² Cf. Beloch, *GG*, IV, 1, pp. 552 ff.

²³ Diodorus, XXII, fr. 7, 4.

both in Sicily²⁴ and on the mainland, where on his retreat Pyrrhus was attacked by a Mamertine army, according to report, 10,000 strong.²⁵

When Pyrrhus' position began to totter, it was to the Mamertines and the Carthaginians that the cities of Sicily appealed for help.²⁶ Along with Carthage the Mamertines thus represented the strongest power in Sicily.²⁷ It therefore seems probable that it was during this period, i. e. about the time of the departure of Pyrrhus, that the Mamertines attained the height of their power and that their dominion reached the extent alluded to by Polybius when he says that they were at feud with the Carthaginians and the Syracusans regarding regions bordering on their domain and that large areas of Sicily had to pay them tribute.²⁸ At the time of Hieron's attack in about 264 B. C. their territory, according to Diodorus, included the north coast of Sicily as far as Alaesa. In the south it extended to Ameselum, thus embracing the very important cities of Alaesa, Abacaenum and Tyndaris.²⁹ What the relations between these cities and the Mamertines were cannot be gathered from the text nor is it expressly mentioned that they were subjected to the Mamertines. However, it appears from Diodorus that Hieron was compelled to occupy them in order to surround the Mamertines; he captured Ameselum by force, Alaesa by treachery, Abacaenum and Tyndaris threw open their gates and were thus occupied by Hieron. From this it is evident that Alaesa and Ameselum fought on the side of the Mamertines and that Hieron had to secure Tyndaris and Abacaenum probably because they sided with the Mamertines. It also appears from the writings of Diodorus that the Mamertines had a garrison at Ameselum.³⁰

²⁴ Plutarchus, *Pyrrh.* 23; cf. Trogus, *Prol.* 23.

²⁵ Plutarchus, *Pyrrh.* 24; cf. Beloch, *GG*, IV, 1, p. 556.

²⁶ Plutarchus, *Pyrrh.* 23.

²⁷ Cf. Dionysius Halicarnassensis, XX, 4, 8.

²⁸ I, 8, 1.

²⁹ XXII, fr. 13.

³⁰ XXII, fr. 13.

If we compare the above with Polybius' statement that large areas of Sicily paid tribute to the Mamertines and also with the fact that after the departure of Pyrrhus large parts of Sicily placed themselves under the protection of the Mamertines, it is not improbable that north-east Sicily with the above-mentioned cities had for some time a military alliance with the Mamertines and paid them tribute. It is also possible that the Mamertines ruled over parts of the interior of Sicily, and their influence also extended to areas south of Ameselum.

The coins in Series VIII with the head of the god Adranus and his dog indicate that the Mamertines were on some occasion also masters of the sanctuary of Adranus on the slopes of Etna (cf. pp. 80 ff.).

Judging from Diodorus, the Mamertines on one occasion also destroyed Camarina and Gela.³¹

In 270 B. C. Rhegium fell into the hands of the Romans.³² According to Polybius, it was the fall of Rhegium that marked the beginning of the decline of the Mamertine realm.³³ When conditions began to become stabilised in Sicily after the departure of Pyrrhus, Syracuse regained during the reign of Hieron some of its former position in east Sicily. In their struggle against Hieron the Mamertines failed to hold their own — as already mentioned, one after the other of the cities allied to them fell, and at last they suffered a crushing defeat on the river Longanus.³⁴ This battle took place about 264 B. C., according to Beloch.³⁵ After their defeat at Longanus the domain of the Mamertines was restricted to the city of Messana. Hieron seems to have pursued them to the city and intended to besiege it. The Mamertines were in a despe-

³¹ XXIII, fr. 1, 3; cf. Holm, II, p. 487; Ziegler, *Gela*, RE VII, 952.

³² Cf. Beloch, *GG*, IV, 1, p. 643; *RG*, p. 473 f.

³³ I, 8, 1—2.

³⁴ Polybius, I, 9, 3 ff.; Diodorus, XXII, fr. 13; cf. Ziegler, *Tauromenion*, RE, R2: V, 31; Holm, I, p. 345; Ziegler, *Longanos*, RE XIII, 1399 f.

³⁵ *GG*, IV, 1, p. 644 f.; cf. Philipp, *Messene*, RE XV, 1227.

rate plight and they contemplated surrender. But the Carthaginian general, Hannibal, whose fleet was lying off Lipara, hurried to the aid of the Mamertines for fear lest Hieron would make himself master of Messana. He compelled Hieron to withdraw and on pretext of aiding Messana he placed a garrison in the city. That is the version given by Diodorus.³⁶ According to Polybius, some of the Mamertines applied to the Carthaginians for help and had a Carthaginian garrison placed in the city; others again turned to the Romans, placed the city under their protection and requested help.³⁷

The Battle of Longanus forms the close of an epoch in the history of the Mamertines. In placing themselves under the Romans their political independence came to an end. Henceforth we hear no more talk about the Mamertines. Messana is only mentioned occasionally as the Roman base during the First Punic War³⁸ and once or twice later, for instance, in the second revolt of the slaves in 103 B. C.,³⁹ and in connexion with the struggle between Sextus Pompeius and Octavianus.⁴⁰

4. Internal conditions.

As regards the internal conditions of the Mamertine state we know still less than of the external. From a Mamertine inscription, however, it appears that the Mamertines introduced into Messana the characteristic »meddix» office of the Oscan states.⁴¹

In its relation to Rome Messana occupied a position of a »civitas foederata»,⁴² a position it seems to have retained right up to the time of Sulla.⁴³ Later the position of Messana may

³⁶ XXII, fr. 13.

³⁷ Polybius, I, 10, 1—2; cf. Heuss, *Klio, Beih.* XXXI, N. F. 18, p. 82.

³⁸ Diodorus, XXIII, fr. 1, 3; 18: 1, 5; XXIV, fr. 1, 8; Strabo, VI, 268.

³⁹ Cassius Dio, fr. 93, 4; cf. Cicero, *Verr.* II, II, 54, 136.

⁴⁰ Strabo, VI, 268; Appianus, *Bell. civ.*, V, 116 ff.

⁴¹ Cf. Rosenberg, *Der Staat der alten Italiker*, pp. 16, 24 ff.

⁴² Cicero, *Verr.* II, III, 6, 13, V, 19, 50.

⁴³ Plutarchus, *Pomp.*, 10; cf. Philipp, *Messene*, *RE* XV, 1228.

have changed, for Pliny does not mention it any more as a »civitas foederata» but calls it »oppidum civium Romanorum».⁴⁴

In the days of the Emperors Messana was famous for its wine, called the Mamertine wine by ancient writers.⁴⁵

In view of the fact that the legends on most coins are in Greek and the names of the gods are also in Greek it is obvious that the Greek language was used by the Mamertines. In addition, the Oscan language was also employed, as appears from the legend on some groups of coins as well as from a number of inscriptions and brick dies in Oscan. The Oscan language was not used, as one might be inclined to assume, on the oldest coins, and was consequently employed only during the first period, and at a later date supplanted by the Greek.⁴⁶ On the contrary these coins cannot be dated earlier than the end of the third century B. C. It is possible that the above-mentioned inscriptions and bricks belong to the same period and the use of the Oscan language at that time is due rather to a conscious tendency to revive the language.

5. Archeological remains.

The archeological traces of the Mamertines at Messana are few. Apart from the coins and the above-mentioned inscriptions there are no archeological remains which can be ascribed for certain to this epoch in the history of Messana.

Several deities figure on the coins: Ares, Zeus, Heracles, Adranus, Apollo, Artemis, Hermes and Aphrodite. Whether cults and temples to all these deities existed we do not know. One inscription,⁴⁷ however, is dedicated to Apollo, which implies that Apollo had a cult centre at Messana. Further, a temple of Artemis

⁴⁴ *Nat. hist.*, III, 88: oppidum Messana civium R., qui Mamertini vocantur. Cf. Mommsen, *CIL*, X, p. 713.

⁴⁵ Strabo, VI, 268; Pliny, *Nat. hist.*, XIV, 66; Martialis, XIII, 117; Athenaeus, I, 27 d.

⁴⁶ Friedländer, *Die oskischen Münzen*, p. 61.

⁴⁷ Cf. Buck, p. 152.

is mentioned by ancient writers. This temple, however, was not in Messina but was probably built in the neighbourhood of Milazzo.⁴⁸ (It is now being searched for by Sicilian archeologists on every hill between Milazzo and Divieto.) Whether there was a cult of the god Adranus in Mesana we do not know (cf. pp. 80 ff.).

Some walls of houses and graves from the first centuries after the birth of Christ have been excavated, and the results of these excavations have been partly published by Paolo Orsi.⁴⁹ The discovery of other graves will be reported in the near future by Dr. Pietro Griffo, Assistant at the Museo Nazionale at Syracuse. These graves possibly originate from the Mamertine period.

With regard to the traces of the Mamertines at Milazzo, ancient Mylae, Piaggia⁵⁰ mentions that in a place then called Contrada Albero, a little south of Milazzo, »in un sepolcro di pietra, coperto da grossi e antichi mattoni, furon trovati due corpi morti; in uno de' quali mattoni si leggeva l'iscrizione MAMEPTINQN.» Two more graves have been discovered in this region, which, according to report, may probably yield findings that will enrich our knowledge of the Mamertines.⁵¹

The name Mamertine still survives in the name of the little locality Calato-Mamertino on Monti Peloritani.

⁴⁸ Silius Italicus, XIV, 260; Appianus, *Bell. civ.*, V, 116; Cassius Dio, 49, 8, 1; Vibius Sequester, *Geographi Latini minores*, coll. Riese, p. 150, 24.

⁴⁹ *Monumenti antichi*, XXIV, 1916, 121 ff.

⁵⁰ *Nuovi studj sulle memorie della città di Milazzo*, 1866, p. 60, note 7.

⁵¹ Orsi, *Not. d. scavi*, 1929, pp. 59 ff.

CHAPTER I

A. Literature.

That the Mamertine coins were subjected to the attention of collectors and researchers as far back as the 16th, 17th and 18th centuries is evident from the fact that they are included in the catalogues of Sicilian and south Italian coins published in those centuries.¹

Some of these earlier publications show one or two Mamertine coins which are not represented in modern handbooks nor in the collections examined by me. Paruta published a coin of the following appearance: Obv. Man's head to r.; Rev. Bull to r. with head erect ² (Pl. LIV, 1). The same coin occurs also in Torremuzza ³ (Pl. LIV, 2). Further, d'Orville published a unique Mamertine coin, the description of which is as follows: »Caput senile, barbatum & laureatum,

¹ Cf. Goltz, *Sicilia et Magna Graecia, sive Historiae urbium et populorum Graeciae ex antiquis numismatibus* ..., I, 1576, Pl. XXIX, 3—8, pp. 79 ff., 201, 271; Paruta, *La Sicilia descritta con medaglie* ..., 1697 (2 ed.), Tav. di Messina, 20—40, 42, 49, 51, Tav. di Mamerco, 2—3, pp. 17 ff., 70; Carrera, *Monumentorum historicorum urbis Cataniae libri quattuor* ... in *Thesaurus antiquitatum et historiarum Siciliae* ..., X, 1723, pp. 368 ff., Pl. XIII, 77—78, cf. *Disquisitio* ... idem pp. 1 ff.; d'Orville, *Sicula* ..., ed. P. Burmanus, II, 1764, pp. 300 ff., 6—12, Pl. III; Pellerin, *Receuil de médailles de peuples et de villes* ..., I, 1763, p. 53 f.; Magnan, *Bruttia numismatica* ..., 1773, p. VII, Pl. 39—50; Torremuzza, *Siciliae populorum et urbium ... veteres nummi*, 1781, p. 44, Pl. XLV, 2—3, 6, p. 46 f., Pl. XLVIII—L, cf. p. 4 f. Pl. III, 1—2 (Adranitarum), p. 41, Pl. XLII, 1—2 (Macella), *Auct.*, I, 1789, Pl. V, 2—7, *Auct.*, II, 1791, Pl. IV, 4; Eckhel, *Doctrina numorum veterum* ..., I, 1, 1792, pp. 222 ff.

² *La Sicilia* ..., Tav. di Messina, 42.

³ *Siciliae pop. et urb. ... vet. num.*, Pl. XLIX, 9.

humeris tenus, quibus toga videtur injecta, R. MAMEPTINΩN. Auriga in curru a bigis citatis tracto, d. flagello castigat equos, s. habenae regit»⁴ (Pl. LIV, 3). A specimen of the same coin is also met with in Torremuzza⁵ (Pl. LIV, 4). There the reverse is furnished with a II; thus judging from the drawing it is not the same coin as that in d'Orville. As regards the former coin there is probably a mistake in the drawing and that it is a question of a distorted reproduction of a coin with the head of Ares and Bull. The second coin probably represents a coin from Menaenum.⁶ That we should not be too suspicious in the case of coins found only in these older publications is shown by the finding of a Syracusan bronze coin in a private Danish collection (now belonging to Den Kgl. Mønt- og Medaillesamling, Copenhagen), which has hitherto been published only in the works of Torremuzza and d'Orville.⁷ With regard to the two Mamertine coins mentioned above it is probable that some mistake has been made and that the coins do not exist.

In the beginning of the 19th century we come across the Mamertine coins in Mionnet,⁸ and they now appear in most Catalogues among Sicilian coins. We shall mention the most important of them later on.

James Millingen, the archeologist, called attention to the existence of a Mamertine coin belonging to the Duc de Luynes bearing the legend MAMEPTINOYM.⁹

⁴ *Sicula*, II, Pl. III, 7.

⁵ Pl. XLVIII, 8.

⁶ Grose, Pl. 77, 16; Gabrici, Pl. VII, 32 a und b.

⁷ Lederer, *Transactions of the intern. num. congr. ... London ...*, 1936, 1938, pp. 80 ff.; cf. Nord. num. Aarskrift, 1938, p. 195.

⁸ *Description de médailles antiques grecques et romaines*, 1806, pp. 257 ff.; Suppl., I, pp. 402 ff.

⁹ *Ancient coins of Greek cities and kings ...*, 1831, p. 33, Pl. II, 13; cf. Friedländer, *Die oskischen Münzen*, 1850, p. 60, Pl. VIII; Salinas, *La collezione numismatica posseduta dal sig. Pasquale Pennisi*, I, 1870, Pl. XI, 22.

The first attempt at a systematisation of the Mamertine coins was made by Gardner.¹⁰ He divided the coins into three groups: the first group comprising coins without any marks of value, the second group containing coins with value marks and the third group containing coins without marks of value but, judging from the style, belonging to a later period.

While Imhoof-Blumer, in his work on Greek coins, includes only a few types,¹¹ Head¹² follows the method adopted by Gardner; he divides the coins into two periods: the first period extending from the capture of Messana by the Mamertines about 282 B. C. to the fall of Syracuse about 210 B. C., comprising coins without marks of value, the second period from about 210 B. C., consisting of coins bearing value marks. This classification has remained practically unchanged to this day, and we come across it in most handbooks and catalogues in which the Mamertine coins are represented.¹³

A grouping of the Mamertine coins in the British Museum, in the Hunterian Collection and in the Museo Mandralisca published

¹⁰ *A Catalogue of the Greek Coins in the British Museum, Sicily*, 1876, pp. 109 ff.

¹¹ *Monnaies grecques, Verhandelingen d. k. Akad. van wetenschappen. Afd. Letterkunde*, XIV, 1883, p. 22 f., Pl. B, 6—7. Cf. *Griechische Münzen aus der Sammlung der Herrn. Fr. Imhoof-Blumer in Winterthur*, Berl. Bl., V, 1870, p. 51 f.; Imhoof-Blumer published together with the Mamertine coins a coin with the legend MAMAP which, however, probably does not belong to the Mamertine coinage. *Mon. gr.*, p. 22 f., Pl. B, 7; cf. Head, *Hist. num.*², p. 156; *BMC Sicily*, p. 240.

¹² *Historia numorum*, 1887, p. 136 f.

¹³ Cf. Holm, *Geschichte Siciliens*, II, p. 486 f., III, p. 686 ff., pp. 711, 736; MacDonald, *Catalogue of Greek coins in the Hunterian collection*, Univ. of Glasgow, I, 1899, pp. 200 ff.; Tropea, *Numismatica siceliota del Museo Mandralisca in Cefalù . . .*, *Archivio storico Messinese*, I, 1901, Fasc. 3—4, p. 167 f.; Head, *Hist. num.*², 1911, pp. 155 ff.; Grose, *Catalogue of the McClean Collection of Greek coins*, Fitzwilliam Museum, I, 1923, pp. 286 ff.; Babelon, *Catalogue de la Collection de Luynes. Monnaies grecques*, I, 1924, pp. 200 ff.

by Gardner, MacDonald and Tropea is found in the monography of the Mamertine coins by Tropea,¹⁴ which constitutes the most extensive classification of these coins.

No systematic classification of the coins in the different periods has been made however, although a number of theories have now and again been put forward with respect to the date of issue of some of the groups.

Thus, Friedländer was of opinion that the coins with Oscan legends were the oldest and were struck while the Mamertines still used the Oscan language, adopting the Greek language later.¹⁵

Head called attention to the similarity between the Mamertine coins in Groups A of Series II—IV and the Zeus Hellanios coins in Syracuse.¹⁶

Two investigators who have in recent years made a close study of the metrological and chronological problems concerning Sicilian coinage are Walter Giesecke¹⁷ and Ettore Gabrici. Each of them has attempted to establish chronologically some groups of Mamertine coins and to determine the metrological standard on which they were struck.

Thus, Giesecke has dated coins with the head of Heracles and eagle (Series VII) and coins with the head of Zeus and eagle

¹⁴ *Numismatica Messano-Mamertina*, *Archivio storico Messinese*, II, 1902, Fasc. 3—4, pp. 22 ff. Tropea published also a Mamertine coin, which in all probability does not exist. The description is as follows: Obv. »Testa di Zeus laur. a s.», Rev. »Tridente fra due delfini (Nuova)». The coin is represented in duplicate: one specimen weighing 16.2 gr., the other 13.00 gr.; cf. *Num. sic.*, p. 168, 9—10; *Num. Mess.-Mam.*, p. 30, 139. The coin is probably an older Messanian coin of the type described above with the legend ΜΕΣΣΑΝΙΩΝ which is frequently indistinct; cf. Salinas, *Le monete delle antiche città di Sicilia*, Pl. XXXIV, 24—25.

¹⁵ *Die oskischen Münzen*, p. 60.

¹⁶ *Num. chron.*, 1874, p. 55; cf. Holm, III, p. 685 f.

¹⁷ Concerning Giesecke's theory that the light Syracusan Pegasi were struck by the Mamertines in Messina (*Sic. num.*, p. 96 f.) compare Ravel, *Num. chron.*, 1925, p. 27 f.

(Series V Group C) to the reign of Pyrrhus.¹⁸ The Mamertine coins grouped in the catalogue under Period I are considered by Giesecke to belong to the time of Hieron, owing to the fact that they show an agreement in weight with a number of the series in Hieron's standard.¹⁹ Moreover he is of opinion that the pentonkia are to be regarded as fractional values of a south Italian uncial ass of 27—28 gr., like the pentonkia with a sitting Asklepios on the reverse at Rhegium, and he assumes that they are similar to the Roman semis of 11.64 gr. and were struck at the same time as the latter after 200 B. C.²⁰

The pentonkia with a reduced weight of about 3—4 gr. have been referred by Giesecke to the same period as those of Rhegium having the same weight, the latter he considers to be pentonkia of the south Italian semuncia of 13.64 gr., which in turn comes close to a semis of the Roman semuncial ass at the time of lex Plautia Papiria and lex Valeria about 91—82 B. C.²¹

Gabrici localises the coins with the head of Ares and Nike (Series VI Group A), with the head of Apollo and Nike (Series XVIII Group B), and coins with the head of Ares and Athena (Series X) to the time before the reign of Hieron II in Syracuse, i. e. before 276 B. C. The first-mentioned coin he considers to be a litra of 25 gr., the second a trias of a litra of 36 gr. and the third a hexas of a litra of 48 gr.²²

The coins with the head of Ares or the head of Zeus with Bull or Eagle (Period I), those with the head of Heracles and Eagle (Series VII), with the head of Adranus and Dog (Series VIII) and the coins with the head of Ares and Lyre (Series XV Group E) are referred by Gabrici to the reign of Hieron, assuming that the heavy coins with the head of Ares and Eagle represent a litra of

¹⁸ *Sic. num.*, p. 99.

¹⁹ *Sic. num.*, p. 133; *Italia numismatica*, 1928, p. 115 f.

²⁰ *It. num.*, p. 139.

²¹ *It. num.*, p. 289, note 1.

²² *La monetazione del bronzo nella Sicilia antica*, 1927, p. 87 ff.

the same weight as those of Hieron. He is nevertheless of opinion that the issue of these coins may have commenced before the reign of Hieron.²³ The pentonkia and the remaining coins he dates after 212 B. C.²⁴

As far as I am aware no close investigation has been made of the Mamertine coins. Nothing has been heard so far of the promised investigation of the later Messenian and Mamertine coinage by Hertha Gielow, and since Miss Gielow in her investigation of the Messenian coinage has not advanced farther than to 490 B. C. we have taken the liberty of dealing with the Mamertine coins on the assumption that Miss Gielow has possibly diverted her study into another field.²⁵

B. Material and method.

The material of Mamertine coins available for study in the form of originals, plaster casts or photographs has enabled us to obtain a more comprehensive survey of the Mamertine coinage than was possible to earlier investigators, who as a rule had only the coins of a single collection at their disposal and had to content themselves with descriptions of other known coins.

The Mamertine coinage is a large-scale issue of bronze coins.²⁶ The coins of the higher denominations were probably struck periodically in large numbers, which is evident from the great quantities of Mamertine coins that have been preserved to our

²³ P. 93 f.

²⁴ Pp. 100 ff.

²⁵ Gielow, *Die Silberprägung von Dankle-Messana (c. 515—396 v. Chr.)*, *Mitteilungen der Bayerischen numismatischen Gesellschaft*, 48, 1930, pp. 1 ff.

²⁶ According to an unconfirmed report, some Mamertine silver coins exist. Compare *Messina e dintorni. Guida a cura del Municipio*, Messina 1902, p. 200: ... »quelle (sc. le monete mamertine) in argento sono molto scarse»; ... In the Ryolo Collection there is a silver-plated Mamertine coin belonging to Series II, Group A. It is a true bronze coin probably plated with silver in modern times.

days. The extensiveness of the material and above all the extremely poor conditions of the coins have in the first place necessitated a rigorous selection in the collection of the material and in the second place a further weeding in the preparation of the Catalogue. Thus the Catalogue contains only coins struck with representative dies for each group, which as far as possible illustrate the development of the types and the style, while on the other hand all the coins studied in plaster casts or from photographs are included in the Tables of Weights.

As appears from the surviving coins, a large number of dies of each type was used and there are very few cases in which it can be proved that two or more coins are from the same die; on the contrary it is the rule that all coins in the same group represented in the collected material are from different dies. Owing to this condition of the material there is therefore no possibility of treating it by the present method employed in classifying Greek silver coins, viz. a relative chronology based on die-coupling. As appears from the Catalogue, die-coupling can be proved in only a few cases, and in only two cases does such a coupling furnish us with any valuable information as to the relative chronology of the coins.²⁷ Whether this method can be used at all in a detailed classification of bronze coins has not yet been definitely established. As far as the Mamertine coins are concerned, however, the method is out of the question.

Therefore in order to construct the chronology of the Mamertine coins we are restricted to the shape of the blanks, the weight of the coins, their type and style. Such an investigation of course cannot give the same accurate results as a system based on die-coupling, but it enables us to systematise the existing material and to obtain a more comprehensive view of it. Moreover it makes it possible for us to form a chronology, which although not absolutely certain, as will be shown as the investigation proceeds, is at least

²⁷ Cf. nos. 27 and 243.

probable and presumably the only possible one at the present stage of research.

Already in the classification made by Gardner and Head a differentiation is made between an early Mamertine coinage issued before about 212 B. C. and a late one. The early period comprised all coins without marks of value and the late period, which was under the influence of the Romans, consisted of all coins with value marks. The present investigation will show that it is possible to distinguish between an early Mamertine coinage and a late one and that the borderline between the two falls in Series X, before which series no marks of value appear on the Mamertine coins, whereas they become common on later coins although not appearing on all. The difference occurring is not, however, confined to the weight standard alone, it appears also in a radical change in the manufacture of the coins, the style and the choice of type. The time of this change does not, as was formerly assumed, coincide with the capture of Syracuse by the Romans. The Romans arrived at Messana already in 264 B. C. and the thorough change in the Mamertine coinage took place some time between 264 B. C. and about 220—216 B. C. and, as mentioned above, the transition can be seen in Series X. Thus if we assume that Series X in Period III is on the borderline between the early and the late Mamertine coinages, Periods I—III belong to the early coinage while Periods IV—V comprise the late coinage. The early part is influenced by the Greek-Syracusan coins and may be called Greek in character, the late one is mainly affected by the Roman-Italian and is predominantly Italian in character.

The period division is obvious in two cases: this refers to Periods I and IV owing to the fact that Series I—V and Series XI—XVI respectively form complete units as far as weight and choice of types are concerned. (For reasons given below, Series XVII is also referred to Period IV.) The other series are grouped together into different periods, but the division into periods is

here more constructive, for the respective series might be regarded as sporadic issues. However, as they may be said to fall under certain definite ranges of time we have for certain reasons thought it convenient to group these, too, into periods so as to facilitate the treatment.

The Catalogue was built on the following principles: parallel issues of equal or unequal denominations are grouped together into series; coins of the same denomination and of the same types into groups; the groups being divided according to the symbols or minor variations into different types. The series are arranged chronologically, and the order of the coins in each group is based on their probable time sequence. The description of the specimens has been made as briefly as possible, and follows essentially the same principles as those employed by the British Museum Catalogues of Greek and Roman Coins and the *Sylloge Nummorum Graecorum*. The weight is given in grammes. The size of the specimens has not been recorded, since the photographs give the exact size of the coins. The relation between the die-position of the obverse and reverse faces is not given, as an absolutely accurate examination of this feature was impossible. All coins included in the Catalogue are reproduced in the plates, nos. 325, 326, 337—339 only in the obverse. The specimens studied from the originals, plaster casts or from photographs, which owing to their being variants of types already included in the Catalogue or owing to their bad condition were not considered suitable for reproduction and are consequently not found in the Catalogue, have been placed in the accompanying Tables of Weights, which comprises 754 specimens (in the case of 7 specimens the weights are not available).

CHAPTER II

A. Monetary Technique.

Before passing on to a discussion of the different series it may be appropriate to say a few words about the method employed in striking the Mamertines coins. With regard to the process of coining a marked difference can be observed between the early and late coinages with a borderline at Series X. This difference refers to the method of preparing the blanks and to the shape of the die.

1. Blanks.

In the preparation of the blanks two different methods were employed. For the coins in Series I—IX the blanks were spherical in shape, in conformity with the method in use in Sicily up to the time of Hieron II at Syracuse.¹ The characteristic edge of the globular blanks, which resulted from the casting of the blank, is plainly seen on most of the specimens (Cf. nos. 6, 9, 10, 14, 27, 33, 36, 39, 42 and so on; on almost every specimen in Series V C).

The blanks for most of the coins in Series X, those for the coins in Series XI, XII A, XIII, XIV A, XV A—C, XVI—XXIII were produced by another method. As appears from the shape of the coins, they were cast in flat moulds with a bevelled edge so that the bottom was smaller than the upper side,² flat channels being drawn from mould to mould. The strips of metal joining the different blanks together were seldom removed very care-

¹ Cf. Hill, *Num. chron.*, 1922, pp. 6 ff.

² Cf. Bahrfeldt, *Berl. Münzblätter*, N. F. I, 25, 1904, pp. 433 ff.; Hill, p. 7 f., cf. p. 2 f.

fully, and as a rule these projecting pieces can be traced on nearly every coin, although this is not always evident from the photographs.

As regards the preparation of the blanks the smaller coins in Series XII B and C, Series XIV B, C and D, Series XV D, E and F, these coins frequently show the characteristic features of coins originating from round blanks (cf. for instance nos 223, 230, 256 and 293). Thus the blanks for these coins were in all probability of the earlier round form.

However, if we examine the coins in Series X it will be seen that no. 156 was struck from a blank originally globular in shape, while other specimens in this series show evident traces of wide connecting strips, as, for instance, nos. 157 and 159. This different procedure in one and the same group is explained by the fact that no. 156 shows clear evidence of being an older coin restruck. Consequently we should not draw any inferences from no. 156 but instead assume, which also the style and the head of Ares justify our doing so, that this series represents the transition to a new technique in the preparation of the blanks and that before this new method had got properly started old coins of suitable size and weight were used as blanks.

The globular blanks are characteristic of the older Sicilian coinage.³ An examination of the Syracusan bronze coins in Den kgl. Mønt- og Medaillesamling in Copenhagen showed that the globular blanks were still being used during the time of Hicetas and Pyrrhus but that their use had been discontinued during the reign of Hieron II. The same thing is probably true of the silver coins. From the time of Hieron II they began to employ the same technique in the preparation of blanks for bronze coins at Syracuse as for the later Mamertine coins. We can plainly see from the shape of the coins that they were cast in such moulds as those described above. They have the same oblique edge as

³ Cf. Hill, p. 6 f.

the Mamertine coins and the obverse or the reverse has a somewhat smaller diameter than the other side, a feature that can be plainly seen in the photographs.⁴ The projecting strips have, however, been more carefully filed off in the Syracusan coins and are discernible in only exceptional examples. The material examined with respect to technique is not large enough to enable us to decide whether both methods were employed during the time of Hieron and if the introduction of the new technique coincides with the coinage reform at the beginning of his reign. That was very likely the case, however, and what we see here may be an influence of the Roman-Italic coinage, which reached Sicily after the arrival of the Romans in the island in 264 B. C.⁵

2. Dies.

Corresponding to the different forms of blanks is also the difference in execution of the upper dies, both with respect to their exterior shape and to the engravings on the dies.

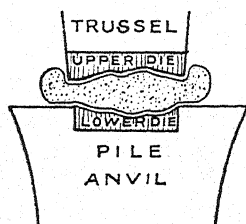


Fig. 1.

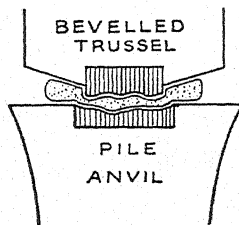


Fig. 2.

After Hill, *Num. chron.*, 1922, p. 31, fig. 2.

For the globular blanks a die of the type drawn by Hill in Fig. 2, left hand, (Fig. 1) was used.⁶ As a rule the blanks were correctly adjusted to the die, but in some specimens, however, it

⁴ Cf. Grose, Pl. 104, 14, 105, 1—9.

⁵ Cf. Bahrfeldt, pp. 433 ff.

⁶ P. 31.

can be seen that the die has struck somewhat to the side so that part of the blank fell outside it, and the bronze welled up along the side of the upper die (cf. reverses of nos. 3 and 53). This die was used in Series I—IX and in Series X, which is rather surprising in view of the above-mentioned method of preparing the blanks. There are several specimens, however, in which the bronze has welled up over the edge (cf. nos. 162 and 164).

As in the method of preparing the blanks a marked difference takes place also in the shape of the dies with the issue of the pentonkia. If we examine these coins it will be seen that another form of die has come into use. In spite of the fact that the die has often struck a little obliquely and that part of the blank has got outside the impressed surface, no elevated edge can be discerned. The edge lying outside the surface impressed by the die is a direct continuation of the stamped surface. No. 238 in Series XIII and several of the coins in Series XVI furnish grounds for assuming that the die was of the same shape as that pictured by Hill in Fig. 2, right hand, (Fig. 2),⁷ and was provided with a slightly bevelled edge for the purpose of receiving and flattening any welling-up bronze.

The alteration in the shape of the blanks and dies beginning with Series X can be noticed also in the execution of the die itself.

In the older coins the relief is high, this being due to the circular blank. The execution is original and of a high standing artistically. We can note a steady improvement in the execution or at any rate a steadily developing artistic conception during the first period, even if this development is confined to a number of good dies in each group, the rest showing themselves to be inferior imitations. The execution of the dies in Period II shows a considerable unevenness, but the better-class specimens form a continuation of the development observed during the first period.

⁷ P. 31.

Already here, however, we come across evidence of a decline in artistry and execution. The fundamental change does not take place, however, until the change occurs in the shape of the blanks and the dies. From Series X—XI onwards the relief is low and flat, due to the flattened blank. The execution shows a marked decline, it loses all its former realism and artistry and becomes common-place. The good dies in each group are as a rule very few in number, the rest being but inferior imitations.

The process by which the dies were made was probably the following: good die-engravers were employed to turn out one or more prototypes in each group. These prototypes were then copied by less skillful workmen. This procedure can be observed during the whole of the Mamertine coinage, although with a considerable difference as regards the earlier and the later Mamertine coins. As appears from the Catalogue, the good dies are comparatively numerous in the earlier groups, and here we can note an evident development in each group, from primitive fumbling attempts to make a good die up to the achievement of good results, whereas among the later coins, produced by means of the new technique, the good dies are few in number, the poor imitations predominating, as, for instance, in Series XI, Group A, in which some good dies of each type are represented, the rest being inferior imitations (cf. also Series XIII, Group A, Series XIV, Group A, Series XV, Groups C and D, and the different types in Series XVI, Group A, etc.).

Whether the Mamertines used a positive hub in making dies cannot be determined for certain on the basis of the present collected material.⁸ However, if we examine the coins, for instance, in Series XII and in Series XVI we shall observe a fre-

⁸ Cf. Hill, pp. 19 ff., 37 f.; Seltman, *Athens, its history and coinage*, pp. 44, 63; Noe, *Num. notes and monographs*, 32, 1927, p. 18 f.; Schwabacher, *Zeitschrift f. Num.*, 1930, p. 326, *Num. chron.*, 1939, p. 258 f.; Ravel, *Num. chron.*, 1935, p. 9 f.

quently very slight difference between the different dies, from which it may be assumed that several of them were made with the same hub and that they have been retouched, thus giving rise to small divergences.

All the Mamertine coins are of the characteristic shape of antique coins, one surface being convex the other concave. The obverse is convex and formed by the anvil die, the reverse is concave and produced by the upper die. We have followed the established usage and called the convex face the obverse, the concave face the reverse.⁹

B. Monetary systems.

Before going on to an examination of the metrological standards, on which the Mamertine coins were struck, we would call attention to the purely local character of these coins. The Mamertines struck only bronze coins, which were issued to meet the requirements of the local trade. The inter-urban trade in Sicily during the time before the advent of the Romans was mainly dominated by the Syracusan coinage, and even after the arrival of the Romans in the time of Hieron the Syracusan coins together with the Roman were chiefly used for this trade. This did not, however, prevent the Mamertine coins from finding a circulation outside the bounds of Messina, and they no doubt satisfied the requirements within the region governed by the Mamertines until their territory was confined to Messina by Hieron. This is the explanation why Mamertine coins from Period I have been found in Milazzo, the ancient city of Mylae, in Tindari, former Tyndaris, and in Patti and other places although no sure data are available. The Mamertine coins circulated in Sicily even after the arrival of the Romans, and they were probably accepted as local currency in those small towns which did not issue coins of their

⁹ Cf. Hill, p. 31.

own and, judging from the hoards, the Mamertine pentonkia had a wide circulation, for they are met with to this very day not only in the neighbourhood of Messina and other parts of the northern coast but also on the southern coast, as, for instance, in the vicinity of Agrigento.

The local character of the Mamertine bronze coins explains why it often happens that they are not adapted to the standards prevalent in Sicily, i. e. the different standards at Syracuse and the Roman-Sicilian standards.

Period I.

During the first period, Series I—V, the Mamertines employed a standard with a binary division into two or three denominations. Starting from the lowest denomination we have called them unit, double and quadruple. The most important coin was the heaviest one, which was issued in much larger numbers than the other denominations. The average weight of these coins in the first four series varies between 16.24 and 17.43 gr. This weight is approximate to the Attic tetradrachms, and it thus appears as if the Mamertines coined their money on the Attic standard with a tetradrachm, a didrachm and a drachm.¹⁰

For reasons put forth on pp. 39 ff. the date of issue of these series has been fixed between 288 and 278 B. C. However, no contemporaneous parallel to this standard can be found. Judging from the tables of Gabrici and Giesecke, the Syracusan bronze denomination under Agathocles¹¹ and Hicetas¹² and Pyrrhus¹³ shows a very variable weight in all groups. This bronze denomination, which was in circulation in Sicily as well as in south Italy,¹⁴ is

¹⁰ Cf. Giesecke, *Sic. num.*, p. 133; *It. num.*, p. 115 f.

¹¹ Gabrici, pp. 79 ff.; cf. Giesecke, *Sic. num.*, pp. 94 f., 112.

¹² Gabrici, p. 83 f.; cf. Giesecke, *Sic. num.*, pp. 169 ff.

¹³ Gabrici, p. 85 f.

¹⁴ Cf. Giesecke, *It. num.*, p. 102 f.

considered by Giesecke to represent an Attic didrachm. It should thus correspond to the Mamertine double. As appears from both Gabrici's and Giesecke's tables, however, it is as a rule heavier than the latter. Moreover, since it can be plainly seen that the Syracusan denomination first appeared in the Mamertine coinage in the coins of Series VII, the weight of which is greater than the earlier double, it cannot be a question of the same denomination. It seems more likely that the Syracusan denomination did not represent an Attic didrachm but a higher denomination, and that the Mamertines did not use this denomination but adopted the Attic standard, possibly after the model of the silver coinage of Agathocles. Thus, judging from the weight of the coins, the Mamertines struck a bronze coin equivalent in weight to the Attic tetradrachm, to which they added a didrachm and a drachm, which may be explained by the fact that the Mamertines had been in the service of Agathocles and were thus quite familiar with the standard used in Syracuse during his reign.

Such a solution of the problem of the origin of the first Mamertine standard also furnishes a plausible explanation of the great difference between the coins in Series I and the Zeus Hellanios coins and that the influence of the Syracusan coins under Hicetas is first traced in Series II. The Mamertines probably began striking their coins independently of the Zeus Hellanios coins, perhaps even before the latter appeared, and issued these coins with characteristic Mamertine types: on the obverse a head of Ares, on the reverse of the heavier coins a bull and on that of the smaller coins an eagle — on a weight standard they learnt during the time they served under Agathocles, while the influence of Hicetas' coins is first traced in Series II, resulting in the Mamertines transferring the eagle to the heavier coins.

The correspondence between the three lowest Hieronian bronze denominations and the above-mentioned Mamertine denominations has induced Giesecke, regardless of the style and types of the

coins, to place them in the second period of the Hieronian coinage,¹⁵ a classification we also come across in Gabrici.¹⁶ The arguments in favour of the earlier placing, however, are so strong that we cannot assign these coins to Hieron's reign, their style and types as well as the technique of their execution indicate only too plainly that they belong to the earlier period of Sicilian coinage, whereas other Mamertine coins of a decidedly later character show evident signs of being contemporary with the Hieronian coins.

Periods II and III.

Passing on to Periods II and III we find that, apart from Group A in Series VI, the quadruple has disappeared and that only the two lower denominations, the double and the unit, are left, but with a somewhat higher weight than in Period I. If we first examine the coins in Series VII we shall find that the Mamertines had adapted themselves to the bronze denomination common in Syracuse and, as shown by the head of Heracles, this series must have arisen under the direct influence of the Syracusan coins bearing the head of Heracles and Pallas. The weight of the coins in Series VI, VIII, IX and X must also in all probability have been based on the same denomination. The fact that this denomination evidently recurs in Series IX and X and is there interpreted as the double of a unit of half the weight is the reason why we have called it double. Thus, judging from their weight, the coins in Series VIII should represent a unit.

It was mentioned above that the coins in Series VI were probably also struck on the same standard. Thus in Group A we should find a quadruple of the double from the second period, a denomination which, as will be seen from the Tables of Weights, is higher in several specimens than the quadruple from Period I, the probable explanation being that here a coin was struck weighing twice that

¹⁵ *Sic. num.*, p. 133, *It. num.*, pp. 115, 116, note 1.

¹⁶ P. 93 f.

of the double of the second period. Gabrici is of opinion that these coins are to be assigned to the beginning of the Mamertine coinage and that they represent a *litra* of 25 gr.¹⁷ For the reasons put forward on p. 75 f., however, the correct placing is undoubtedly that given here, and these coins were struck after those in Series I—V and the issue is to be regarded as a continuation of the quadruple during period I. The issue was not a large one and was confined to a single group and may be explained as a casual issue to commemorate some victorious campaign. Some of the coins, perhaps the first ones, are of a strikingly heavy weight while other fall to that of the earlier quadruple. Of the smaller coins of the same types only one specimen is known, the weight of which is 6.93 gr., and it is doubtful whether it is a double or a unit. The weight, however, points to its being the latter.

The coins in Series X are provided with two circular marks of value, thus forming a double unit. They are of the same weight as the double in Series IX and the style shows that they are near to the latter as regards time. The marks of value, however, are features foreign to Sicilian bronze coinage after 400 B. C. up to the arrival of the Romans. Their occurrence on the Mamertine coins in question cannot therefore be due to anything but the influence of the Roman bronze coinage. The coins were struck, however, on the earlier denomination and in the Mamertine style of Series IX which had been influenced by the Hieronian coinage. The placing of the characteristic value marks of the Roman bronze coinage on these coins can only be due to the fact that the Mamertines had made an adaptation to the Roman standard prevailing at that period. Seen in relation to Roman coins, this series, in which the weight falls from 10.57 to 4.3 gr., represents a *sextans* on the *sextantal* standard during the transition to the *uncial* standard. And we find the direct prototype of this Mamertine *sextans* in

¹⁷ Pp. 87 ff.; cf. Grose, 2415, Pl. 80, 14.

the Roman-Sicilian sextans with ear of corn, the weight of which shows the same falling tendency as that of the Mamertine.¹⁸

Period IV.

Series X thus brings us to the incipient Roman influence shown by placing marks of value on the coins, implying an adaptation to the Roman weight standard. As appears from the style and the preparation of the blanks, the placing of this series between Series IX and XI is evident, and the coins form the transition to the first pentonkia in Series XI. This brings us to the pentonkia and their fractional values in Series XI—XVI. Characteristic of the pentonkia, as well as of the majority of the coins in Series X, is that, contrary to the older blanks, they were cast in flat moulds. That explains the flatness of the coins and the low relief, and although the diameter of the pentonkion is approximately the same as that of the quadruple in Period I the weight is considerably lower, the average weight being about 11—10 gr. With but few exceptions among the obviously late coins in Series XVI, e. g. nos 352 and 353, all of them bear the letter Π in the right or left field of the reverse. This Π implies that these coins are equivalent to 5 units and is generally interpreted as ΠENTONKION a designation we have retained.¹⁹ The fractional values of the pentonkion, the ounce and half ounce respectively, are found in Series XII, XIV, XV; in Groups B and C of Series XV we also come across two other denominations, possibly 4 and 3 ounces respectively.

Earlier investigators have assigned all coins without marks

¹⁸ Compare Bonazzi, *RIN* XXXV Ser. 2 V, 1922, p. 15.

¹⁹ Compare Epicharmus, *Pollux*, IX 82: the designation is used by Gardner, Head, Gabrici, Grose, MacDonald and others. That Π has also been regarded simply as E is shown by a series of coins from Menaenum, where Π alternates with E; cf. Gabrici, p. 103. Giesecke interprets Π as pentechalkon, *It. num.*, p. 137 f.; cf. p. 117, note 4.

of value, i. e. the lower denominations in the above-mentioned series, to the period before 212 B. C. and the pentonkia after 212 B. C. As appears from pp. 102 ff., we have attempted to prove that the smaller coins are undoubtedly contemporary with the pentonkia and are to be regarded as fractional values of the latter. The style shows that the pentonkia began to appear towards the close of the reign of Hieron II and that they continued to be issued even a little after that time. Thus these coins began to be struck at an earlier date than was formerly supposed (cf. p. 19). Now the question arises, where did the Mamertines get the impulse to issue a coinage on this system with a pentonkion of about 11—10 gr. and with its fractional values. In the same manner as in Series X, the influence undoubtedly came from the mainland and the appearance of the pentonkion in Messina is no doubt associated with the Rhegian pentonkia and, as in the preceding series, the Mamertines adapted themselves to the value of the ass at the time in question. As shown in the Tables of Weights, the weight of a Mamertine pentonkion is equivalent to a quincunx according to the Roman uncial standard.²⁰ Thus the pentonkia, with their fractional values, were from a metrological point of view influenced by and represent parallel issues to the Roman-Sicilian bronze coins based on the uncial standard. There Roman-Sicilian coins were frequently restruck on coins from the time of Hieron, Hieronymus and of the Republic, and were consequently in circulation in Sicily at the same time as the pentonkia.²¹ We may also call attention to a number of similarities between the pentonkia and the Roman-Sicilian semisses with ear of corn, which are of approximately the same weight as the Mamertine pentonkia: the technique in the preparation of the blanks was thus the same, the diameter, the thickness and the flat relief of the coins are the same, and the head of Zeus on the coins in Series XVI may

²⁰ Cf. Gabrici, p. 105 f.; Giesecke, *It. num.*, p. 139.

²¹ Cf. Bonazzi, pp. 16 ff.

be due to an adaptation to the Zeus head on the semisses. Further, whereas in Series XI and XII the head on the obverse is turned to the left, as in Syracusan coins during the reign of Hieron and in the Rhegian coins, which served as the respective prototypes of the two series, the head on the obverse of all subsequent Mamertine coins is turned to the right as in the Roman-Sicilian bronze coins.

The style of the Mamertine coins, however, is decidedly superior, as far as the good dies are concerned; they were produced by means of a Greek technique of the same kind as at Syracuse and Rhegium, which nevertheless does not contradict what was said above concerning the adaptation, metrologically and technically, to the Roman-Sicilian coinage. The pentonkia and their fractional values should thus have arisen under the influence of the Roman coins with ears of corn, struck on the uncial standard. That coins of the same weight as the pentonkia and the Roman semisses in Sicily during this time were not restricted to Messana and the Roman-Sicilian coinage is evidenced by the bronze coins during the time of Hieronymus and the Syracusan Republic²² and by coins struck at Tauromenium,²³ the technique and style of which plainly show that they were contemporaneous with the pentonkia in Series XI—XIV.

The types and the style indicate that the coins in Series XVII were in all probability contemporaneous with the pentonkia in Series XVI, but judging from the value mark XII they may belong to a different standard from that of the pentonkia and perhaps represent 2 ounces on the sextantal standard.²⁴

Period V.

As far as style is concerned, the coins in Series XVIII are later than the pentonkia, they represent, however, a higher bronze

²² Cf. Gabrici, p. 94 f.; Grose, 2953—54, Pl. 107, 2—3.

²³ Gabrici, p. 95; Grose, 2997—3003, Pl. 109, 1—2.

²⁴ Giesecke, *Sic. num.*, p. 127; cf. Head, *Num. chron.*, 1874, p. 64 f.

denomination. The coins in Group A bear 5 marks of value and vary in weight between 18.16 and 14.45 gr., and the coins in Group B bear 3 marks of value and have a weight varying between 13.22 and 9.98 gr. They thus seem to represent a quincunx and a quadrans respectively on an Italian standard. Their weight, however, is higher than that of the earlier pentonkia and implies a higher value of the bronze. We are thus faced with a problem the only explanation of which is that these coins are the result of a sporadic issue on an Italian standard and not on the earlier Italian-Sicilian system. They may be compared to the quincunces and quadrantes at Teate and Venusia.²⁵ Their execution is much cruder than that of the earlier Mamertine coins, and has a decidedly south Italian character.

In the following series, XIX—XXIII, we can follow the declining value of bronze in the fall of the weights, which may be parallel to the gradual reduction of the Roman ass from one to half an ounce. In Series XIX we have a quadrans of an average weight of 7.03 gr., thus representing a quadrans on the uncial standard, whereas the coins in Series XX, strongly reminiscent of those in Series XIX, represent a semis approximate to the semuncial standard, as also does the triens in Series XXI. The coins in Series XXII were in all probability struck after the introduction of the semuncial standard in 89 B. C.²⁶ The coins of Group A bear the letter II and thus represent pentonkia, while those of Group B possibly represent ounces. As indicated by the choice of type and the style, the coins of Group C, Series XXIII, cannot have been struck much later than those of Group A of Series XXII. Group A. HΛ or ΔH occurring on all coins in Series XXIII, both the heavier ones in Groups A and B, having an average weight of 5.61 (2 specimens) and 5.02 gr. (3 specimens) respectively, and

²⁵ Cf. Grose, 476—479, Pl. 19, 2—5; 489—491, Pl. 19, 11—13.

²⁶ Cf. Mattingly, *Roman coins*, p. 17.

the lighter ones in Group C with an average weight of 3.34 gr. (17 specimens), remind us of the bronze coins issued by Mark Anthony's naval prefects, in Sicily in 36—35 B. C.²⁷ The coins issued by them represent a sestertius bearing the double mark Δ (4 asses) and HS, a tressis with Γ (3 asses), a dupondius with a B (2 asses) and an ass with an A and a semis with an S. It is not excluded that the H Δ and Δ H on the Mamertine coins were copied from these coins and that the coins in question represent 4 sestertii and were furnished with a double mark. The difference in weight between the coins of Group A and B and those of Group C, in spite of the marks of value being the same, may be explained on the assumption that two series, one light, the other heavy, were struck at about the same time. The weight of the Mamertine coins, however, is strikingly low as compared with that of the sestertii of the Roman naval prefects.

C. Dates.

1. Hoards.

The most important factor in determining the chronology of antique coins is as a rule represented by the hoards. In the case of the Mamertine coins, however, there are no hoards reported which furnish us with any absolutely reliable data with respect to their chronology. Some of the finds, however, give us some hints as to the area in which some of the coins circulated and corroborate a number of the conclusions arrived at in Chapter III with regard to their dating.

In hoards found outside Sicily, part of which was composed of Mamertine coins, only types of the first five series are represented. (Information as to size and weight is wanting, the coins

²⁷ Bahrfeldt, *Die Münzen der Flottenpräfekten des Marcus Antonius*, *Num. Zeitschrift*, 37 (1905), 1906, pp. 10 ff.; Willers, *Geschichte der römischen Kupferprägung*, pp. 113 ff.; Mattingly, *Roman coins*, p. 17, note 2.

may therefore just as well belong to Series IX.) We thus find coins belonging to these series in a hoard from Carife in Samnium,²⁸ in another from Strongoli in Calabria²⁹ and in a third from the necropolis of St. Louis in Carthage.³⁰ On the other hand, finds of later Mamertine coins have not been reported outside Sicily but certainly in the island itself,³¹ among them being an important find at Piazza Armerina containing a Mamertine coin belonging to Series XVI, Roman coins struck on the triental and sextantal standards, the latest coin datable for certain belonging to the time of the Syracusan Republic, 215—212 B. C. According to Orsi, the deposit of this hoard can be dated to about 200 B. C.³²

These finds show that Mamertine coins belonging to Period I had a circulation outside Sicily, thus confirming the theory that the coins placed under this period belong to the politically active part of the Mamertine dominion at Messana, i. e. during their struggle against the Carthaginians and Pyrrhus. The find at Piazza Armerina indicates that the pentonkia were in circulation at the same time as Roman coins struck on the sextantal and uncial standards and Syracusan coins from the time before the arrival of the Romans at Syracuse, thus confirming the inference drawn in Chapter III from the types and the style as to the dating of the pentonkia.

2. Chronology.

As the investigation proceeds it will become clear that the decisive factor in determining the absolute chronology of the

²⁸ Petra, *Not. d. scavi*, 1896, p. 210 f.; Cesano, *AMIIN* I, 1913, p. 60, Tabella I; cf. Noe, *Num. notes and monographs*, 78, 1937, p. 65.

²⁹ Fiorelli, *Not. d. scavi*, 1881, p. 143 f.; cf. Noe, p. 265.

³⁰ Delattre, *Les missions catholiques*, 28, 1896, pp. 213 ff.; Moore, *Carthage of the Phoenicians in the light of modern excavation*, p. 109; Meltzer, III, p. 9, note 1.

³¹ Catania, Noe, p. 69; Palma Montechiaro at Agrigento, Marconi, *Not. d. scavi*, 1931, p. 404; cf. Noe, p. 208.

³² Orsi, *AMIIN* VI, 1930, p. 105 ff.; cf. Noe, p. 215.

coins is based essentially on the contemporaneousness we are able to trace between the Mamertine and the Syracusan coins. Thus the fixed points in the chronological system will be the contemporaneousness that Series II—V show with the Zeus Hellanios coins and that shown by Series VII with the Heracles-Pallas coins; for the same reason Series IX—X fall under Hieron's time, while Series XI began to be struck before his death and Series XVI was issued during the time of the Republic. Thus the pentonkia fall between the time before the death of Hieron and about 200 B. C. As regards the remaining coins we have no possibility of dating them exactly, but they show a continuous fall in the value of bronze, which no doubt runs parallelly with the fall of the Roman ass. This period should thus extend from about 200 B. C. to about 35 B. C., to which time we can assign the last Mamertine coins.

We have attempted to date the Mamertine coins in conjunction with some series of Syracusan coins, following the dates of the respective series given in the handbooks mentioned below. A close investigation of these series should be able to furnish valuable information as to their exact time of issue, and consequently also that of the Mamertine coins. But this is not the place for such an investigation.

Besides their similarity to a number of Syracusan coins, we have also pointed out some agreements between the Mamertine coins and the Rhegian and Bruttian coins, no regard being paid to the previous dating of those Rhegian coins bearing marks of value to the time after 203 B. C.³³ and the Bruttian coins to the days of Pyrrhus.³⁴ Since the above outlined chronology of the Mamertine pentonkia, based on their similarity to the Syracusan, is probably in the main correct, it should be possible by closely examining the Rhegian coins to draw certain valuable conclusions

³³ Cf. Head, *Hist. num.*², p. 111 f.

³⁴ Regling, *Janus*, I, 1921, pp. 80 ff.; Cesano, *Transactions of the intern. num. congr.* ... London ..., 1936, pp. 56 ff.

as to their chronology from their similarity to the Mamertine pentonkia. Even if we cannot to the same extent draw any inference as to the chronology of the Bruttian coins from their frequently doubtful influence on the Mamertine coins, nevertheless the similarities mentioned below argue in favour of the hypothesis put forward by Head and others that the Bruttian coins continued to be issued up to the time of the Second Punic War. A careful investigation of these coins, however, would probably furnish quite a different aspect of their chronology and at the same time also give important results with respect to the chronology of the contemporaneous south Italian and Roman coinages.

In assuming that the pentonkia assigned to the days of Hieron, Hieronymus and the Republic were struck on the Roman uncial standard, we have touched on the problem that has received the attention of eminent researchers for several years, viz. the problem of the dating of the early Roman Republican coins.³⁵ Without taking up a position in this discussion we should like to point out that the starting point of our assumption that the coins in Series X are struck on the sextantal standard and the pentonkia on the uncial standard is the investigation of the Roman-Sicilian bronze coinage carried out by Bonazzi, who showed that Syracusan coins restruck into Roman on the sextantal and uncial standards circulated in Sicily during the days of Hieron, Hieronymus and the Republic and were thus contemporary with the Mamertine pentonkia.³⁶

³⁵ Cf. Mattingly & Robinson, *Num. chron.*, 1938, pp. 1 ff.; Giesecke, *Antikes Geldwesen*, 1938, pp. 138 ff.

³⁶ *RIN XXXV Ser. 2 V*, 1922, pp. 13 ff.


CHAPTER III

PERIOD I, c. 288—278 B. C.

Under Period I have been grouped five series in which three denominations, quadruple, double and unit, are represented. These series constitute the beginning of the Mamertine coinage, which probably started immediately after the arrival of the Mamertines at Messana and extended until a few years after the outbreak of the war against Pyrrhus. Thus Period I covers about ten years, which for the Mamertines was a period of political success and, as evidenced by the uniform and comparatively good coinage, also a period of prosperity. The coinage of this period bears the impress of unity, independence and originality. The types are the head of Ares and the head of Zeus, Bull and Eagle, which are appropriate symbols for these Samnite warrior-people.


SERIES I

Group A, Quadruple.


Obv. Head of Ares,  ; Rev. Bull.

Obv. Head of Ares to r., laureate; behind, helmet with apex and cheek-piece; border of dots; in front $\text{APE}\omega\text{Σ}$.

Rev. Bull charging l.; head facing, l. fore-foot raised, tail curled forwards; plain border; above and in exergue MAMEP TI NΛN .

1. Berlin (Imhoof-Blumer Coll.) 16.00 gr. 
2. Berlin (Löbbecke Coll.) 18.20 gr.
3. Berlin 17.25 gr., Gabrici, p. 93.
4. Florence (Migliarini, 1032) 16.50 gr.
5. Stockholm 15.04 gr.
6. London (BMC Sicily, p. 110, 17) 14.89 gr.
7. Pennisi 15.43 gr.
8. London (BMC Sicily, p. 110, 18) 17.14 gr.

*Plate I**Group B, Double.*

Obv. Head of Ares,  ; Rev. Eagle.

Obv. Similar to the preceding; behind, arrow-head down; border of dots; in front $\text{APE}\omega\text{Z}$.

Rev. Eagle standing l. on thunderbolt, wings spread; plain border; around, beginning in l. field, MAME P TINAN .

9. London (BMC Sicily, p. 110, 12) 9.03 gr.
10. Winterthur 8.65 gr. Rev. of the same die as the preceding.
11. Berlin (Imhoof-Blumer Coll.) 9.20 gr., Gabrici, p. 93.
12. Berlin (Friedländer Coll.) 6.95 gr., Gabrici, p. 93.
13. Syracuse 8.7 gr.
14. Stockholm 7.01 gr.
15. Florence (Migliarini, 1034) 10.00 gr.
16. Vienna 9.56 gr. Obv. of the same die as the preceding.

Plate II

At the beginning of the Mamertine coinage we find, judging from the style, two contemporaneous issues. The coins in Group

A represent the quadruple with an average weight of 16.24 gr. (23 specimens) and those in Group B the double having an average weight of 8.44 gr. (10 specimens).

Group A. The sequence of the dies has been determined on the development of the head of Ares. On no. 1 is seen a plainly designed head of Ares, almost rectangular in shape, the lines of the face and head straight, the lips and ears scarcely indicated, and the hair stiffly drawn. On the following dies the design loses much of its stiffness, the features are more refined and the lines softer. To the later dies undoubtedly also belong the powerful and well-proportioned head on no. 8. A comparison between no. 1 and no. 7 shows that also the design of the helmet has been improved; in no. 1 the cheek-piece is straight, in no. 7 it is more elaborate, curving forwards and shaped into two tongues. The development in the dies cannot be followed on the reverse of the coins, although two different types of bulls can be noted. On the earlier coins the body of the bull is short and fat while on the later ones it is longer and thinner. In one or two cases the reverse, too, shows a good execution, as, for instance, on nos. 2 and 7.

Group B. The plain design of the head of Ares and the simple arrow on the obverse and the stiff, disproportioned eagle on the reverse argue in favour of placing the pair of dies for coin no. 9 at the beginning of this group. If this is not the very first pair of dies it represents at any rate one of the first grouping attempts to create the head of Ares and the eagle intended to figure on the coins of this group. The design of the head of Ares and of the eagle is simple and is still on a primitive stage. As in Group A, the head of Ares is almost rectangular, the lines of the face and back of the head are straight, the features are hard and the treatment of the hair is but little advanced. The eagle is straight and stiff, the head and legs are disproportionately large as compared with the body. On no. 10 the reverse of 9 reappears coupled with a somewhat altered head of Ares with more elaborate

features. The eagle on the reverse of no. 11 closely resembles the preceding one, but it has lost some of the stiffness characterising the latter. The shaft of the greater wing-coverts, however, is streaked upwards, a feature indicating that this is one of the earlier dies. The placing of this coin after nos. 9 and 10 may also be defended from the execution of the head of Ares, for even if the head on the obverse die 11 is coarser the stiffness in design characteristic of the earlier heads of Ares has been surmounted. The arrow behind the head is also drawn with greater care. Obverse 12 shows a fine and beautiful boy's head of the type found again on no. 13, and therefore defends its place although the eagle belongs to an earlier die. Reverses 13 and 14 show an eagle of a more advanced stage, some of the earlier stiffness has disappeared, the body and head are larger and the plumage more abundant. The fine heads of Ares on nos. 12 and 13 have, however, on no. 14 been succeeded by a somewhat changed type, which forms a transition to the Ares head on the obverses of nos. 15 and 16, both from the same die, on which the head of Ares in this group has reached its highest degree of perfection. It is in the same style as the other heads of Ares in this group, but within conventional bounds, the straight line of face and neck, the characteristic arrangement of the head, a rather artistic head has been designed with features expressing strength and resolution. The reverse die of no. 15, however, is very worn and belongs to one of the earlier dies. On no. 16 it has been superseded by an eagle which, designed in accordance with the conventional scheme, is also decorative and stands on a high plane artistically.

A comparison between the heads of Ares in the two groups shows that the same type has been employed; the same rectangular head, the same straight line of face and back of the head, the same treatment of the hair, the three characteristic curls at the nape reappearing on coins of both groups. The head passes through a parallel development, which can be plainly followed in spite of

the scanty material. The coarsely drawn head of Ares on no. 1, corresponding to the head on no. 9, gives place to the refined heads of Ares on nos. 5—7, which in turn correspond to the elegantly designed boy's heads on nos. 12—13, while the powerful head of Ares on no. 8 in Group B corresponds to the heads on nos. 14 and 15—16.

The symbols behind the head of Ares in both groups: the Italian helmet¹ in Group A and the downward pointed arrow-head in Group B supplement each other, representing two important items of the Mamertine equipment.

The letters are also the same in both groups. On the reverse they are disproportionately large and encircle the entire coin. The $\mathbf{\Gamma}$ and $\mathbf{\Lambda}$ are characteristic.

The determining factor in our placing these two groups at the beginning of the Mamertine coinage is the execution of the head of Ares and the eagle. If we first examine the head of Ares on the coins in these two groups we shall see that a development takes place from the first dies nos. 1 and 9 up to the later ones, for instance, nos. 6 and 7 and nos. 15 and 16. Later on we shall see that the same head is repeated in Series II but in a more advanced stage and that this development continues during the whole of the first period. It is thus evident that the development of the head of Ares taking place in these two groups constitute the first stage of its development during the first period.

What has been said above is also true of the eagle on the reverse of the coins in Group B. Here, too, we have the first stage in the development of the eagle during the first period. The stiffly drawn eagle on the oldest coins is replaced by an eagle with an easier carriage. Practically all the coins in this group show the first, groping attempts to fashion the eagle we meet later in the following series. Already in Series II it has undergone

¹ Not a Macedonian helmet, as Gardner supposed: *BMC Sicily*, p. 109, 3. Cf. also MacDonald, p. 201, 3, 11. See further p. 52 f.

an important change, although the pose and in particular the characteristic drawing of the long wing-coverts prove that it is the same eagle but in a more advanced stage of skill attained by the die-engravers.

That the coins in both these groups are the oldest ones is also evident from the shape of the letters mentioned above. Already in Series II they have been subjected to several changes and have lost the characteristic serial peculiarities: greatness and ungainliness on the reverse and the letters Γ and Λ have disappeared altogether.

Holm, Hill and Gabrici regard the Mamertine head of Ares as an imitation of the Zeus Hellanios head on the Syracusan bronze coins from the reign of Hicetas.² When these authors made that statement they had before them some coins from Groups A in Series II, III or IV with a head of Ares on the obverse and an eagle on the reverse. If we compare especially the coins in Series II, Group A, with the Syracusan Zeus Hellanios coins we shall find great similarities. And, as will be seen later on, there are circumstances which point to their being contemporaneous. Nevertheless, as the investigation shows, the coins with the head of Ares and eagle of the type we meet in Series II—IV, Groups A, do not represent the oldest Mamertine coins with a head of Ares, on the contrary the coins described above are the oldest and this puts the problem of the origin of the head of Ares in quite a different light. The simple, primitive head we come across in the earlier dies indicate that no direct prototype was copied. However, if one wishes to discover a head that may have given the impulse to the Mamertine head of Ares we are more inclined to believe that the Mamertine die-engraver had another head in mind. And that was the head of Heracles with taenia on a number of Syracusan bronze coins, which often shows a striking resemblance

² Holm, III, pp. 685 ff.; Hill, *Historical Greek coins*, p. 82; Gabrici, p. 87; cf. Head, *Num. chron.*, 1874, p. 55.

to the Ares head of the first period.³ The prototype of this type is in all probability the head of Apollo or of Ares on the Macedonian *Philippeioi*, in which even earlier researchers sought to see a prototype of the Mamertine head of Ares.⁴ Gabrici does not accept Head's dating of these coins with the head of Heracles and Lion with club to the time of Agathocles and he is of opinion that they were struck after the death of Agathocles and before 287 B. C.,⁵ they might therefore have been contemporary with the earliest Mamertine coins, which is also supported by their similarity with the latter.

The legend shows that the head is that of Ares. But the combination with the bull on the reverse shows, however, that under the Greek name is concealed the Samnite god Mamers, from whom the Mamertines derived their name. The bull has probably not been placed there simply by chance, but was chosen on account of the part played by it in the cult of Mars.⁶ The type is the conventional one on Sicilian and south Italian coins, and the direct prototype may have been the bull on some of the Agathoclean bronze coins.⁷

A secondary place has been accorded to Zeus or Jupiter, symbolically represented on the reverse by the eagle holding a thunderbolt in its claws. The same thing applies to the Mamertine eagle as to the head of Ares. This figure, too, has been regarded by

³ Head, *Num. chron.*, 1874, Pl. IX, 3; Grose, Pl. 102, 10—11; Giesecke, *Sic. num.*, Pl. 22, 10; *SNG* II, 1501—1508. Cf. also the head with laural wreath on some Agathoclean gold, silver and bronze coins. Cf. Head, *Num. chron.*, 1874, Pl. VIII, 1, 2, 7, 8; Grose, Pl. 100, 13—14; Giesecke, *Sic. num.*, Pl. 19: 11, 13, 14.

⁴ Cf. Holm, III, p. 688; Gardner, *A history of ancient coinage* 700—300 B. C., p. 423.

⁵ P. 81.

⁶ Roscher, *Ausführliches Lexikon der griechischen und römischen Mythologie*, II, 2431 f.

⁷ Head, *Num. chron.*, 1874, Pl. VIII, 9—12; Gabrici, p. 79 f.; *SNG* II, 1483—1487.

some investigators as a copy of the eagle on the Zeus Hellanios coins. But what was said above regarding the head of Ares is also true here; the investigators had before them the eagles in Groups A of Series II—IV, which present a certain resemblance to the Syracusan eagles, as we shall see later. Judging from the style, the Mamertine eagles in Group B are the oldest and represent the first attempts to produce a Mamertine eagle and their execution shows that they are not copies of the Syracusan. The stiff attitude, the lack of proportion and the poor execution also indicate that the eagle has been modelled without any direct prototype. Yet the pose is too well known for it to be original. It is the familiar eagle from the Ptolemaic coins which spread to Sicily and to the Italian mainland. And if we closely examine the Mamertine eagles, not only of this group but also those of the following groups, we shall note one feature in which they differ from the Syracusan eagles but resemble the Ptolemaic, and that is the drawing of the web of the long wing-coverts. It is drawn as short lines directed downwards with one or two exceptions. This is also characteristic of the Ptolemaic eagles,⁸ whereas in the Syracusan eagle the long wing-coverts are drawn with two or three lines and the web is not delineated. We shall recur to this later.

From what we have said above it is evident that the coins in Series I were influenced rather by coins struck during the life of Agathocles or shortly after his death and that they might have arisen without being influenced by the Zeus Hellanios coins, and since such an influence can be plainly traced on the coins in Series II it can be assumed that Series I was issued before the striking of the Zeus Hellanios coins or simultaneously with the beginning of the latter but independently of them and that they belong to the first years of the Mamertine dominion in Messana.

The relatively small number of these coins surviving indicate

⁸ Cf. Svoronos, *Tὰ νομίσματα τοῦ κράτους τῶν Πτολεμαίων*, III, II. VIII, 1—13, X, 1—25.

that the issues were not large and that they did not extend over a longer period than a couple of years at most. Assuming that the Mamertines began to strike these coins shortly after their arrival at Messana, we are probably not far wrong if we fix the approximate date of the issue of the coins in Series I between about 288 and 285 B. C.

SERIES II

Group A, Quadruple.


Obv. Head of Ares,  ; Rev. Eagle, Sometimes Φ .


Obv. Head of Ares to r., laureate; behind in type *a* helmet with apex, cheek- and neck-pieces, in type *b* axe-head?, in type *c* arrow upwards, in type *d* spear-head upwards, in type *e* spear downwards; border of dots; in front $\text{APE}\circ\angle$.

Rev. Eagle standing l. on thunderbolt, on no. 42 head front, wings spread; plain border; in type *a* on nos. 28—32 in l. field Φ ; around, beginning in r. field, MAMEP TINQN (on no. 42 with Ω).

Type *a*

Symbol: helmet.

17. Glasgow (Hunterian Coll., MacDonald, 3) 17.24 gr.
18. Berlin (Fox Coll.) 17.77 gr.
19. Cambridge (Bunbury Coll., 372) 17.37 gr. 
20. Vienna 16.44 gr.
21. Naples (Fiorelli, 4607) 18.10 gr.

- 22. London (BMC Sicily, p. 109, 3) 17.78 gr. 
- 23. Vienna 15.07 gr.
- 24. Syracuse 15.8 gr.
- 25. Pennisi 17.24 gr.
- 26. Syracuse 18.1 gr.
- 27. Syracuse 17.3 gr.

Type *a*Rev. In l. field Φ .

- 28. Berlin (v. Gansauge Coll.) 15.40 gr.
- 29. Naples (Coll. Santangelo, Fiorelli, 7879) 15.40 gr.
- 30. Cambridge (McClellan Coll., Grose, 2416, Pl. 81, 1) 17.96 gr.
- 31. Stockholm 15.68 gr.
- 32. London (BMC Sicily, p. 109, 4) 18.56 gr.

Type *b*

Symbol: axe-head?

- 33. Copenhagen (V. Freund 1882) 17.48 gr.
- 34. Berlin (Löbbecke Coll.) 14.25 gr.
- 35. London (BMC Sicily, p. 109, 6) 16.00 gr.

Type *c*

Symbol: arrow.

- 36. London (BMC Sicily, p. 109, 5) 21.26 gr.

Type *d*

Symbol: spear-head.

- 37. Berlin (Imhoof-Blumer Coll.) 14.80 gr.
- 38. Syracuse 17.3 gr.


39. London (BMC Sicily, p. 109, 7) 16.86 gr.
 40. Glasgow (Hunterian Coll., MacDonald, 4) 18.73 gr.
 41. London 13.76 gr.

Type *e*

Symbol: spear; Rev. Eagle's head front.

42. Berlin (Löbbecke Coll.) 17.87 gr.

*Plates III—V**Group B, Double.*

Obv. Head of Zeus,  ; Rev. Bull.

Obv. Head of Zeus to r., laureate; behind thunderbolt; border of dots; in front ΔΙΟΣ.

Rev. Bull etc.; plain border; in exergue ΜΑΜΕΡΤΙΝΩΝ.


43. Berlin (Fox Coll.) 8.40 gr.
 44. Berlin (Löbbecke Coll.) 6.93 gr.
 45. Berlin (Imhoof-Blumer Coll., Imhoof-Blumer, Berl. Bl., V, p. 51, 2) 8.60 gr., Gabrici, p. 94.
 46. London 6.88 gr. 
 47. Pennisi 8.62 gr.
 48. Naples (Fiorelli, 4635) 7.70 gr.
 49. Milan 7.60 gr.

Plate VI

In the coins in Series II we see the further development of the Mamertine coinage. We still meet two denominations, the quadruple and the double, the former having an average weight of 16.78 gr. (51 specimens) and the latter an average weight of 7.64 gr. (11 specimens).

The types have been changed to some extent in this series. The head of Ares appears again on the heavier coins, but the eagle has taken the place of the bull. On the lighter coins the head of Zeus has replaced the head of Ares, while the eagle has been supplanted by the bull.

Group A. The heavier coins have been divided into types according to the symbols: type *a* with a helmet as symbol, type *b* with an axe-head, type *c* with an arrow pointed upwards, type *d* with a lance-head turned upwards and type *e* with a lance pointed downwards.

The head of Ares is the same as that on the coins in Series I but is more skilfully executed; it has the same straight line of the back of the head, the same treatment of the hair with the three characteristic curls at the back. The head, however, has been greatly altered, it has become larger, the neck is more powerful and the features are more detailed and have lost their severe harshness. Most closely related to the heads in Series I are the heads of type *a*, which can be noted not only when regarding the shape of the head of the earlier coins of type *a* but also in the arrangement of the hair at the nape. In both Series I and Series II, Group A, type *a* a small curl turning downwards is seen above the laurel wreath. In the following types the head of Ares has the same powerful form as on the last coins of type *a* and another curl has been added at the back of the head below the laurel wreath opposite the other one. Another feature indicating that the coins of type *a* should be placed before those of the other types is the occurrence of the helmet as a symbol, thus proving that the coins of this type form a direct continuation of the coins in Group A of Series I. The helmet, however, shows a better finish and has been furnished with a neck-guard.

The eagle, which has taken the place of the bull, has on the whole the same attitude as on the coins in Series I, Group B. The body, however, leans a little more forward and the left wing is

extended farther away from the body. The drawing of the long wing-coverts is the same. On the whole the eagle on these coins is more skilfully executed. On the coins of type *a*, however, a development in design takes place from a badly proportioned eagle to a better executed one, which also justifies the placing of coins of type *a* at the beginning of Group A, while the eagle occurring on some of the other types is more in agreement with the later eagles of type *a*.

If we examine the legends we see that the letters are smaller than in Series I and that the characteristic Γ and Λ have been replaced by M and Ω .

Type a. Examining first the coins of type *a*, the determining factor in the placing of these coins in the Catalogue is the development of the head of Ares and the eagle. The first die-pair on no. 17 shows a tenderly drawn head of Ares combined with as yet a clumsily designed eagle. The head of Ares on no. 19 is executed with more firmness, is better proportioned and shows more precision in design. The course of the development, however, seems to be towards a head of Ares of the type we meet on no. 25, where the tenderness and charm characteristic of the earlier dies have disappeared and given place to a well-designed, serious face. Also in the treatment of the eagle we can follow a development from the clumsy eagle on nos. 17—18 to the well-proportioned and well-drawn eagle on nos. 25—26. Combined with the types of Ares head we meet on no. 26, which is coupled with a splendid and well-designed eagle, we find on no. 27 an eagle of a type we shall meet with again in Group A, Series III. This furnishes us in the first place with proof of the correctness of the development of the head of Ares just ascertained in type *a*, viz. that the head on no. 27 represents one of the later heads of Ares found in this type, and in the second place it also proves that the two groups are near each other in time and that Series III followed type *a* in Series II, Group A. Arguing against this hypothesis, it is true, is the theory

that the coins of the other types *b—e* are later than those of type *a*. Another explanation, however, is possible. The other types were perhaps struck at about the same time as type *a*. In view of the small number of coins surviving, as compared with the larger number of coins of type *a*, it seems as if the striking of the types *b—e* was secondary. It is also possible that the coupling of an obverse from type *a* in this series with a reverse of Series III was accidental, a disused die may have been employed. The probable explanation, however, is that coins of type *a* were principally minted during this time and that the other types represent a secondary coinage independent of type *a* and that the minting of these latter coins continued until the dies had been replaced by the dies of Series III.

The helmet in this type is almost the same as in Series I, Group A. Here it is provided with a neck-guard; on some of the coins the cheek-piece is still straight, nos. 25—27, on others it is curved a little forwards as on nos. 22 and 32, while in a number of well finished specimens the cheek-piece is shaped into two tongues pointing forwards, nos. 17, 18, 29 and 31. On no. 19 the helmet is seen in front view and the two pendent cheek-pieces on both sides is plainly visible. On no. 22 we see a helmet with a long, narrow crown-piece and plainly marked visor, a short neck-guard and a forward-bending cheek-piece, evidently a helmet of a somewhat divergent type.

The above-mentioned helmet-types in Series I A and in Series II A, type *a* obviously represent a picture of the helmets worn by the Mamertines. They are reproductions of a well-known type of helmet used all over Italy, not only in the north and centre but also in the south and in Sicily, during the 4th and 3rd century B. C.⁹

⁹ Paribeni, *Ausonia*, II, 1908, pp. 280 ff., fig. 4; Brizio, *Monumenti antichi*, IX, 1901, 748 ff., Pl. VI, 23; Bendinelli, *Monumenti antichi*, XXIII, 1914, p. 654, fig. 34; Patroni, *Not. d. scavi*, 1909, p. 274 f., fig. 1; Ferri, *Not.*

In Series I, where the execution is more schematic, the neck-guard has not been indicated and the cheek-piece has a more simplified form, while in Series A type *a* we find the helmet on one or two coins (cf. nos. 17, 18, 29 and 31) of exactly the same shape as we know it from the surviving specimens. From the reproduction on the Mamertine coins we may draw the conclusion that this was the helmet worn by the Mamertines on their arrival at Messana and during the first period of their rule there. Undoubtedly they brought this type of helmet with them from the Italian mainland when they set out for Sicily as mercenaries. The same helmet is worn by the attacking warrior on the Bruttian coins¹⁰ and moreover crowns the trophy on another series of those coins.¹¹

In the field to the left of the eagle on the reverse some of the coins of this type bear a Φ . The dies, however, do not show any noteworthy difference from those mentioned above, and both the head of Ares and the eagle appear to have developed along the same lines, and, as proved by the likeness between some of them, the coins were undoubtedly struck parallelly.

Types b, c, d, e. Only a few specimens of the coins referred to these types have survived. The dies show a greater irregularity than in type *a*. Their similarities to the latter make it probable that they were struck at the same time as or at the end of the issue of type *a*. The head of Ares, however, shows the characteristic difference mentioned above, i. e. the addition of a small curl below the laurel-wreath at the back of the head. Further, the head is more powerful and more in accordance with the later dies of type *a*. This applies to the dies of type *b* nos. 33 and 34; no. 35 of type *b* and no. 36 of type *c* are very closely related and were in

d. scavi, 1927, p. 359, fig. 1; Richter, *Greek, Etruscan and Roman bronzes (The Metropolitan Museum of Art)*, p. 416 f., 1549.

¹⁰ Cf. Grose, Pl. 48, 10—11.

¹¹ Cf. Grose, Pl. 49, 8—10.

all probability produced at the same time by the same engraver: it is the same lean face with the sharp features and the same thin eagle. Nos. 37, 38 and 39 of type *d* present the same head of Ares as nos. 33 and 34 and are coupled with a finely finished eagle. Two dies, nos. 40 and 41, differ from the remaining dies of type *d*. The faces lack the firmness in design characteristic of the heads in types *b* and *c* and the remainder of type *d*. They are softer and more mellow. The difference from the preceding dies, however, is seen more clearly on the reverse. Besides lacking the firmness in design characteristic of the eagles on the later coins of type *a* and types *b*, *c* and *d*, these eagles show a characteristic difference: the long wing-coverts and the tail-feathers are differently drawn than formerly, the web is not marked by oblique lines as on the other eagles, the entire feather being instead represented by two or three long lines, i. e. in the same manner as in the eagles on the Zeus Hellanius coins from Syracuse. An original eagle, and entirely different from the others, is the one shown on no. 42 of type *e*. Here the head and body are facing, in contrast to the earlier coins on which the head is always in profile. Only one specimen of this eagle is known. The head of Ares belongs to types *b*, *c* and *d*, but is characterised by the full features and is reminiscent of the head on no. 40. The legend on the reverse has a Ω of the type characterising the coins of Series III, which proves that this coin belongs to the later coins of Group A.

The symbols in types *c*, *d* and *e* are emblems of war: the arrow, the lance-head and the lance. The symbol in type *b* has been interpreted by Gardner as an axe-head.¹² It is more like the head of a round club.

Group B. The lighter coins in Group B were probably struck at the same time as the heavier ones in Group A. The contem-

¹² *BMC Sicily*, p. 109, 6.

poraneousness of the two groups is evident from their similarity in style. The head of Zeus on the obverse of the coins in Group B shows the same execution as the head of Ares in Group A, the only difference being that the head of Zeus has long hair. We may, for instance, compare the head of Zeus on no. 45 with the head of Ares on no. 18; both heads have undoubtedly been produced by the same artist: we see the same clear outlines, the same features and the same treatment of the hair. Further, a comparison may be made between nos. 46 and 49 and nos. 33—37. Thus the two groups are the work of the same artists, executed on the same principles, and they show such close resemblances that they must have been contemporary issues and represent two denominations on the same standard. On the reverse is repeated the bull of the first series. Two variants can be distinguished: a well executed bull with a short and powerful body and well-designed neck-folds, as on nos. 43—44, and a poorly executed bull having a longer and thinner body on the subsequent coins.

The head of Zeus is an imitation of the head of Ares, and behind the head of Zeus has been placed his symbol, the thunderbolt. In answer to the question as to what might have given the artist the idea of replacing the head of Ares with the head of Zeus, we should like to suggest in the first place that this change was rather obvious, for Zeus was represented from the very beginning on the Mamertine coins by the figure of an eagle with a thunderbolt in its claws. And in combining a head of Zeus with the bull of Ares on the smaller coins a parallel was thus obtained to the representation on the heavier ones, on which the head of Ares was coupled with the eagle of Zeus with a thunderbolt in its claws. Thus both groups were consecrated to Ares and Zeus at the same time as they were intimately allied together.

As already mentioned, Head, Holm, Hill and Gabrici have called attention to the similarity between the coins of Group A and the Zeus Hellanios coins from Syracuse. In a hurried glance

this similarity is striking: the head of Ares corresponds to the Zeus Hellanios head and the Mamertine eagle corresponds to the Syracusan. Even if a careful examination of the two heads reveals that the treatment of details shows no resemblance at all, nevertheless the combination with the Ptolemaic eagle in the same position in both series is too striking to be overlooked or assumed to be due to chance. There must be some connexion between the two series, and they must be contemporary.

The Zeus Hellanios coins are as a rule attributed to the time of Hicetas.¹³ Gabrici¹⁴ considers them to belong to the later part of Hicetas' reign. So far no reliable investigation of these coins has been made, consequently we will adhere to the generally accepted view that they were struck during the reign of Hicetas and, as Gabrici assumes, continued to be issued also after that time. The coins, a large number of which are found in all collections of Sicilian coins, and which beside the well-known types presented in Head¹⁵ also show specimens of greatly reduced weight, undoubtedly bear evidence of an economic decline, a fact indicating that they were also minted during that period of financial distress which presumably prevailed before the arrival of Pyrrhus. Gabrici distinguishes two types of Zeus Hellanios coins: one on which Zeus has short hair, the other on which he has long hair,¹⁶ and he assumes that the type with short hair is earlier than the one with long hair. If we examine the head of Ares on the Mamertine coins we shall find that it shows a closer similarity to the coins on which Zeus has short hair, and thus if we want to find a prototype of the heads of Ares in this series we should look for it among the coins on which the god is pictured with short hair.

¹³ Head, *Num. chron.*, 1874, p. 54 f.; Giesecke attributes them to the time of Pyrrhus, cf. *Sic. num.*, p. 111.

¹⁴ Pp. 82 ff.

¹⁵ *Num. chron.*, 1874, Pl. X, 7—8.

¹⁶ Pp. 82 ff.


A comparison between the Mamertine coins in Series I, Group B, and the earlier, according to Gabrici, Zeus Hellanios coins reveals that there is such a great difference in execution that, as already indicated, we are tempted to doubt whether there is any connexion at all between the coins. But the impulse to place the head of Ares and the eagle on the heavier coins and the development of the head in this series may perhaps be ascribed to the desire to produce a parallel series to the Syracusan coins; it is possible that we may speak of a contemporaneousness or even of a mutual influence, which would of course confirm the contemporaneousness of the two series. But to regard the head of Ares as a copy of the Zeus Hellanios head is not correct. As regards shape the former differs greatly from the latter. The difference is seen not only in the shape of the head and the delineation of the features but is most evident perhaps in the treatment of the hair, which is drawn by entirely different methods. This is also true of the eagle. In both cases the attitude is that well known from the Ptolemaic coins, but the treatment of details is different, which, as already pointed out, is most plainly seen in the drawing of the long wing-coverts. In the Mamertine eagles the web of the long wing-coverts is marked by oblique lines, whereas it is not visible on the Syracusan birds. This may be said to be the rule, but there are exceptions, and it seems to me that these exceptions in both cases constitute the proof of the contemporaneousness and mutual influence of the two series. Among the collected material there are two specimens of Mamertine coins on which the wings are drawn in the same manner as on the Syracusan coins. These two coins are nos. 40 and 41, and they differ somewhat in type from the other coins in Group A, which may indicate that a new procedure was experimented with, probably inspired by the Syracusan eagles. I have observed the same phenomenon on some Syracusan coins at the Museo Archeologico in Syracuse, on which the feathers are drawn by means of oblique lines in the same

manner as in the Mamertine eagles. It seems to me that here we have proof that the coins in Group A of Series II are contemporary with the Zeus Hellanios coins. The impulse to the head Zeus with long hair on the coins in Group B, which is an imitation of the head of Ares it is true, may have been obtained from the head of Zeus Hellanios with long hair.

Thus if Gabrici's assumption that the Zeus Hellanios coins are to be attributed to the later part of Hicetas' reign is correct the dating of the coins in Series II should be fixed at about 285—280 B. C.

SERIES III

Group A, Quadruple.

Obv. Head of Ares,  ; Rev. Eagle.

Obv. Head of Ares to r., laureate; behind arrow-head downwards; border of dots; in front on nos. 50—56 APE•Σ, on nos. 57—61 APE◦Σ.

Rev. Eagle etc.; plain border; around, beginning in l. field, on nos. 50—54 MAMEP TINQN, on nos. 55—56, 58—59 MAME P TINQN, on nos. 57, 61 MAMEP TINQN, on no. 60 MAME PTINQN.


50. Berlin (Löbbecke Coll.) 18.62 gr.

51. Glasgow (Hunterian Coll., MacDonald, 5) 17.17 gr.

52. Pennisi 18.91 gr.


53. Naples (Fiorelli, 4609) 18.50 gr.

54. Ryolo 17.01 gr.

55. Naples (Fiorelli, 4608) 17.50 gr.
 56. Berlin (Löbbecke Coll.) 16.95 gr. 
 57. Winterthur 15.95 gr.
 58. Copenhagen (C. VIII.) 18.02 gr.
 59. Berlin 18.40 gr.
 60. Munich 17.31 gr.
 61. London (BMC Sicily, p. 109, 8) 17.00 gr.

Plates VII—VIII

Group B, Unit.

Obv. Head of Ares; Rev. Bull.  .

Obv. Similar to the preceding; no arrow-head; border of dots;
 in front $\text{APE} \circ \Sigma$.

Rev. Bull etc.; above arrow-head to r.; plain border; in exergue
 MAMEPTINQN .

62. Berlin 4.00 gr.
 63. Syracuse 5.6 gr.

Plate VII

In Series III two denominations are represented, the quadruple and the unit, the former having an average weight of 17.43 gr. (25 specimens), the latter 4.80 gr. (2 specimens).

The head of Ares is found again in both groups, as also the eagle on the heavier coins and the bull on the lighter ones. Common to both groups is the arrow-head, on the obverse in Group A and on the reverse in Group B.

Group A. The treatment of the head of Ares and the eagle differs from that in the earlier series, and a liberation from the earlier scheme can be observed. On a number of the dies the head of Ares has lost its rectangular shape, it has acquired more powerful features, a large nose and large curved lips; the ear is hardly

discernible, the back of the head is immense on the earlier coins and the line of the nape is curved deeply inwards. The treatment of the hair is different; if we look at the earlier coins it will be seen that the hair is massively drawn, the locks are delineated by a few, simple lines and the characteristic curls at the back are no longer visible. It is the work of another artist, which signifies a repudiation of the earlier type of Ares head. The same thing is true of the eagle. Here, too, the earlier type has been abandoned, a type which, as the result of many experiments, reached the technically finished eagle on nos. 33 and 37. In this group the eagle has become colossal and misshapen and has frequently been made so large that it overlaps the die: the body is huge, as also are the head and beak, and the legs and wings; the plumage is rich.

The determining factor in fixing the relative order of the dies in the Catalogue was the execution of the head of Ares. The head changes in character to a certain extent in this group. The stiff and colourless head of Ares on nos. 50—52 is replaced already on no. 53 by a head of Ares drawn with softer lines and with less rigid features. On nos. 55—59 the large occiput has disappeared, the features have become more regular and the treatment of the curls has lost its decorative stiffness. Another reason for placing nos. 50—54 before nos. 55—59 is that the eagle on the later coins is better proportioned than on the earlier ones. Further, it should be noted that the laurel-wreath has no berries on nos. 50—53 and 55—56, as in Series I and II, while the wreath on other coins of this series and also on subsequent series, with but few exceptions, has berries. The head on no. 60 forms a transition to the realistically designed head on no. 61, modelled by an artist who was not hampered by the scheme of the two types of Ares heads representative of this group. We meet here a realistically drawn, sensual face with round features and with the hair arranged in irregular curls. The arrow, however, shows that this coin is intimately connected with this group. The eagle, too, differs from the

earlier eagles and seems to be an experiment by an unskilled die-engraver. The small head and body are out of proportion to the large wings and tail and the powerful legs.

Owing to the fact that an eagle of this type was combined with a coin of type *a* in Series II, Group A, it is evident that this group followed the coins of Group A, Series II. That they are later is also apparent from the fact that the heads of Ares and the eagle do not follow in any way the scheme adopted from the very beginning of the Mamertine coinage. It is obvious that these coins were designed by new die-engravers, who departed from the old tradition by creating a new head of Ares and a new eagle while at the same time retaining the earlier types. This new type disappears already in this group, being replaced by the realistically designed heads of Ares on nos. 60 and 61, which in their realism are reminiscent of the heads in Series IV, and thus form a transition to the latter. Likewise, the letters indicate that Series IV followed Series III. Not only the dots of the letters on no. 61 but also the shape of the Ω are the same in both series.

Group B. Contemporary with the coins in Group A are the two coins in Group B. This is evident not only from the same arrow occurring above the bull on the reverse of the coins but also particularly from the shape of the head of Ares and its execution, proving that the coins were designed by the same artist. The arrow shows that both issues were intended to be two denominations on the same standard. The lighter coin represents a fourth of the heavier one.


A characteristic feature of all coins in Group A is that the blanks were too small for the dies, and consequently the whole of the die was not stamped on the coin. Thus, part of the border of dots is missing on the obverse, frequently part of the legend, and on the reverse often the thunderbolt or half the legend and occasionally the head of the eagle.

SERIES IV


Group A, Quadruple.

Obv. Head of Ares,     ; Rev. Eagle,   .

Obv. Similar to the preceding; behind in type *a* thunderbolt, in type *b* cornucopiae, in type *c* bucranium, in type *d* torch; border of dots; in front $\Lambda \text{PE} \circ \Sigma$.


Rev. Eagle etc.; border of dots; in l. field in type *a* and in type *b* on nos. 65, 66, , on no. 67 star with eight rays, in type *c* star etc., in type *d* Σ ; on no. 64 around, beginning in l. field, MAMEP TI NQN , on nos. 65—67, 69—74 in front MAMEPTINQN , on no. 68 MAMEPTINQ N .

Type *a*

Symbol: thunderbolt; Rev. In l. field .

64. Syracuse 19.1 gr.

Type *b*

Symbol: cornucopiae; Rev. In l. field on nos. 65, 66 ,
on no. 67 star.

65. Glasgow (Hunterian Coll., MacDonald, 7) 17.30 gr.

66. Cambridge (Gutteridge Gift) 15.28 gr.

67. Naples (Fiorelli, 4610) 16.35 gr.

Type *c*

Symbol: bucranium; Rev. In l. field star.

68. London (BMC Sicily, p. 109, 10) 17.09 gr.

Type *d*

Symbol: torch; Rev. In l. field Σ .


- 69. London (BMC Sicily, p. 110, 11) 16.00 gr.
- 70. Ryolo 18.18 gr.
- 71. Berlin (v. Gansauge Coll.) 15.86 gr.
- 72. Copenhagen (Pontoppidan 1907) 16.80 gr.
- 73. Ryolo 18.28 gr.
- 74. Vienna 17.83 gr.
- 75. Munich 16.47 gr.

Type *e*

- 76. Reggio di Calabria.

Plates IX—X

Group B, Double.

Obv. Head of Ares, Sometimes  ; Rev. Bull.

Obv. Similar to the preceding; behind on no. 89 torch; border of dots; in front $\text{APE}\circ\Sigma$.



Rev. Bull etc.; border of dots; above and in exergue or above on no. 77 $\text{MAMEPTI } \text{N}\Omega\text{N}$, on nos. 79—80 $\text{MAMEP } \text{TIN}\Omega\text{N}$, on nos. 81—85, 89 $\text{MAMEPTIN } \Omega\text{N}$, above on nos. 87—88 $\text{MAMEPTIN}\Omega\text{N}$.


- 77. Berlin (Peytrignet Coll.) 7.81 gr.
- 78. Glasgow (Hunterian Coll., MacDonald, 14) 9.95 gr.
- 79. Naples (Fiorelli, 4636) 7.25 gr.
- 80. Cambridge (Bunbury Coll., 372) 9.67 gr.
- 81. London (BMC Sicily, p. 110, 19) 8.31 gr.

- 82. Glasgow (Hunterian Coll., MacDonald, 13) 7.29 gr.
- 83. Cambridge (McClean Coll., Grose, 2423) 7.65 gr.
- 84. Cambridge (Leake, Isl., p. 64, 10) 8.22 gr.
- 85. Glasgow (Hunterian Coll., MacDonald, 12) 7.84 gr.
- 86. Vienna 9.29 gr.
- 87. Munich 8.11 gr.
- 88. Vienna 9.51 gr.
- 89. Cambridge (McClean Coll., Grose, 2422, Pl. 81, 5) 8.49 gr.

Plates XI—XII

Group C, Unit.

Obv. Head of Ares, Sometimes   ; Rev. Bull,

Sometimes  .

Obv. Similar to the preceding; border of dots; behind on nos.

91, 92 bucranium, on no. 93 cornucopiae; in front $\Lambda\Phi\epsilon^{\circ}\Sigma$.

Rev. Similar to the preceding; border of dots; above on nos. 91—95 club to r.; above and in exergue on no. 90

MAMEP TINQN . on nos. 91—93, 95 MAMEPTI NQN ,

on. no. 94 above MAMEPTINQN .

90. Cambridge (McClean Coll., Grose, 2424, Pl. 81, 6) 4.41 gr.

91. From casts in Winterthur. The original?

92. London (BMC Sicily, p. 110, 21) 4.11 gr.

93. Cambridge (Leake, Isl., p. 64, 11) 4.17 gr.

94. Syracuse 4.6 gr.

95. Copenhagen (C. VIII. Falbe, Paris 1833) 4.45 gr.

Plate XII

Three denominations, the quadruple, the double and the unit, are represented in Series IV, the quadruple having an average

weight of 17.05 gr. (12 specimens), the double 8.32 gr. (16 specimens) and the unit 4.35 gr. (5 specimens).

The similarity between the head of Ares in all three groups shows that they are parallel issues. Still it is difficult to educe the exact parallelism, as the symbols are as a rule present on the heavier coins but are missing on the lighter ones.

Group A. If we first examine the coins in Group A it will be apparent from the varying symbols behind the head of Ares on the obverse and the letters or star in the left field on the reverse that we are concerned with several successive issues. Of these issues 5 are represented here: type *a* with a thunderbolt behind the head of Ares, combined with the following type *b*, characterised by cornucopiae, by the letter **A** in the left field of the reverse. The latter type is connected by means of a star to type *c* with a bucranium behind the head of Ares, and lastly we have type *d* with a torch behind the head of Ares and an Σ on the reverse. Further, we include in this group a coin without symbols, which although entirely isolated is nevertheless by reason of its execution intimately connected with the other coins of this group. A chronological classification of the different types present great difficulties.

Examining the coin of type *a* we note that the head of Ares is as yet only a rough drawing of the later heads, the eagle is still clumsy with too powerful a body and the left wing of too great a dimension. In the following types we come across a powerful head of Ares with coarse features, naturalistically drawn. The highest level is attained in the two heads on nos. 74 and 75. After the still falteringly designed eagles on nos. 65 and 66 we meet on the other dies a firmly and elegantly drawn eagle with a small head, set very far back; coarser in design are the two eagles on nos. 74 and 75. Of the same type as these is the eagle on no. 76, which bears a different head of Ares from that on the other coins.

Groups B and C. The head of Ares in Groups B and C passes through a parallel process of development. In Group B this development can be followed step by step from the head of Ares on no. 77, resembling the head on no. 64, up to the clumsy heads of Ares on nos. 86—87, which correspond to the heads of Ares on nos. 73—75. More uniform are the heads of Ares on the small coins in Group C, although their general character is the same as in the other groups. The smaller coins have been executed with less care, which is especially evident from the figure of the bull and from the irregular, frequently too large legend.

A beginning of the emancipation from the earlier conventionalism can be observed already in a couple of the heads in Series III, Group A, viz. nos. 60 and 61; the naturalism we trace already in both these heads with their full features, the prominent wings of the nose and thick lips, the round cheeks and the freer treatment of the hair, reaches its full development in this series, nos. 67—76, where such heads as we find in nos. 73—75 rank with the portraits of the heads on coins of Hellenic rulers, e. g. the head of Philetaerus from Pergamum.¹⁸ No. 73 will bear comparison with the head of Demetrius Poliorcetes.¹⁹ The faces we see in these coins, however, are not Greek but Italian, Samnite condottieres, with determined and sensual features, marked by good living, faces modelled by artists possessing a well developed psychological power of observation. It is a minor art closely associated with the great art of the school of Lysippus, Greek in character, and marked by Greek naturalism — a living, inspired realism, which is inconceivable without a living model. Undoubtedly the models of these heads of Ares were the Mamertine »meddeix», and it is beyond dispute that it is their features, drawn with a striking realism, that we see on the coins of Series IV.

The coins in this series are a direct continuation of the coins

¹⁸ Hekler, *Die Bildniskunst der Griechen und Römer*, Pl. 310, 5.

¹⁹ Hekler, Pl. 310, 4.

in Series III. This will be seen most clearly in a comparison between the coins in Series IV A and those in Series III A. Glancing at the head of Ares we still find the large occiput, although not so exaggerated as in some of the coins of Series III A. We also have the same powerful profile. We may compare, for instance, no. 65 and nos. 50 and 52. The treatment of the hair is on the whole the same, even if the rigid conventionalism in, for example, nos. 50—53, has disappeared altogether and the curls at the back have given place to coarse hair. The ear has been executed much better. If we then examine the eagle we shall see that the bird on nos. 64—66 closely resembles that on the coins of the preceding series, and it seems to mark another stage in the development that the designing of this bird passes through in these two groups up to the elegantly drawn eagle on coins of types *b*, *c* and *d* (nos. 67—73). The close connexion with Series III A is also evident from the fact that we meet the same letters with the characteristic dots as on no. 61 (cf. 57—59).

This series, too, is in all probability contemporary with and to a certain extent influenced by the Zeus Hellanios coins. The symbols on the coins of this series are no longer those characteristic of the earlier Mamertine coins, instead they are the symbols usually occurring on Greek and Roman coins of the 3rd century B. C., the cornucopiae, the bucranium and the torch, and also the thunderbolt, otherwise appearing with the head of Zeus. Of these symbols we find the thunderbolt²⁰ and the bucranium²¹ on the Zeus Hellanios coins and also the star and the letter *A*. The occurrence of the letter *A* and the star on the Mamertine coins can only be explained by their having been influenced by the Zeus Hellanios coins. Further, similarities can also be traced in the execution of the eagle, and these similarities are greater in this series

²⁰ Cf. MacDonald, p. 242, 200, Pl. XVII, 20; Head, *Num. chron.*, 1874, Pl. X, 7.

²¹ Head, *Num. chron.*, 1874, p. 54.

than in the case of the eagles in earlier series. On the Zeus Hellanius coins reproduced by Grose²² we note the same upright attitude, the same head, pressed backwards, features which are more marked on the more skillfully executed Mamertine coins in Group A of Series IV. In view of this resemblance it may be safely assumed that the coins in Series IV are also contemporary with the Zeus Hellanius coins. And in the event of these coins belonging to the time of Hicetas and possibly to the time immediately following his reign, they should therefore be assigned to about 280 B. C. The occasionally excellent, original, bold and even artistic workmanship indicate that the coins came into existence during a period of success and prosperity in the Mamertine state. We know that before and during the Pyrrhic Wars the Mamertines enjoyed a period of great political activity and that they were then at the height of their power. Viewed in conjunction with the lack of uniformity discernible in the execution of the coins, especially in the case of the smaller coins, it seems likely that they were issued during a period of success but under troubled conditions. In all probability we should assign the issue of these coins at about the close of the reign of Hicetas or somewhat later and during the Pyrrhic War. The issue may thus extend from about 280 to about 278 B. C.

SERIES V

Group A, Double.

Obv. Head of Ares; Rev. Bull.

Obv. Head of Ares to l., laureate; border of dots; in front
 APEOΣ .

²² Pl. 104, 1—5.

Rev. Similar to the preceding; border of dots; above and in exergue on nos. 96—97 *MAMEP TINQN*, on no 98 *MAMEP TINQN*.

96. Copenhagen (C. VIII. Falbe, Nauplia-Athens 1834—35) 8.85 gr.

97. Naples (Coll. Santangelo, Fiorelli, 7906) 9.20 gr.

98. London (BMC Sicily, p. 110, 20) 6.23 gr.

Plate XIII

Group B, Unit.

Obv. Head of Ares, Δ ; Rev. Bull, Sometimes \Rightarrow .

Obv. Similar to the preceding; behind helmet with apex and cheek-piece; border of dots; in front traces of legend.

Rev. In type *a* bull charging l. etc.; in type *b* bull charging r. etc.; r. forefoot raised; above arrow-head to r.; border of dots; in exergue *MAMEPTINQN* .

Type *a*

Rev. Bull l.

99. Berlin (Imhoof-Blumer Coll.) 4.45 gr.

100. Berlin (Imhoof-Blumer Coll.) 5.20 gr.

101. Cambridge (McClean Coll., Grose, 2425, Pl. 81, 7) 5.45 gr.

Type *b*

Rev. Bull r., arrow-head.

102. Naples (Coll. Santangelo, Fiorelli, 7907) 5.50 gr.

103. Ryolo 5.64 gr.

104. Munich 4.93 gr.

Group C, Unit.

Obv. Head of Zeus; Rev. Eagle, Sometimes \mathfrak{A} .

Obv. Head of Zeus to l., laureate; border of dots; in front $\Delta \iota \omega \leq$.

Rev. Eagle etc.; plain border; on nos. 105—110 in l. field \mathfrak{A} ;
around, beginning in r. field, MAMEP TINQN.

105. Pennisi 4.75 gr.

106. London (BMC Sicily, p. 110, 15) 3.87 gr.

107. Syracuse 3.6 gr.

108. Copenhagen (V. Freund 1882) 5.03 gr.

109. Syracuse 4.1 gr.

110. Berlin 2.95 gr.

111. London (BMC Sicily, p. 110, 16) 5.02 gr.

112. Berlin 4.00 gr.

113. London (BMC Sicily, p. 110, 14) 4.65 gr.

114. Cambridge (Leake, Isl., p. 64, 13) 4.88 gr.

115. Glasgow (Hunterian Coll., MacDonald, 10, Pl. XV, 1)
4.24 gr.

116. Copenhagen (Ramus, 27) 2.90 gr.

Plate XIV

In Series V we have placed three groups of coins, of which Groups A and B are direct continuations of Groups B and C in Series IV, while Group C, for reasons given later, has been classed with them. The coins in Group A represent a double of 8.09 gr. (3 specimens), those in Group B a unit of 5.09 gr. (8 specimens), and in Group C a unit of 4.10 gr. (16 specimens).

Contrary to the coins in Series I—IV, the head on the obverse of these coins, like those in the following series issued during Period II, is turned to the left. Weight, choice of type and style,

however, prove that they are intimately connected with the preceding series and that, at any rate as far as Groups A and B are concerned, they form a direct sequence of the coins in Series IV, for which reason they have been placed under Period I. In this series, however, the quadruple is missing.

Group A. The obverse dies show the same realistically modelled head of Ares as in the preceding series, although the head on no. 98 is less coarsely drawn and the features are straighter and finer. As seen from nos. 96 and 97, the same dies have been used for the obverses as for the coins in Series IV, Group B, whereas the reverse die for no. 98 is superior.

Group B. As regards types and style, the coins of Group B are closely connected with no. 98. The design of the head of Ares shows striking resemblances, both with respect to the drawing of the face and of the hair on the forehead and the ear (cf. nos. 98 and 101). Behind the head of Ares we again find the Italian helmet as a symbol. On the basis of the position of the bull, the coins in this group may be divided into two types; one, type *a*, with the bull to the left, and the other, type *b*, with the bull to the right and an arrow-head pointed to the right above the bull. Since the position of the bull in type *a* corresponds to that in the earlier series, this type should be earlier than type *b*, in which the bull occupies an entirely new position. This breaking of the earlier tradition may explain the inferior execution of the bull.


Group C. On the obverse we find the head of Zeus from Series II, Group B. It is the same head with long hair and a laurel-wreath and the legend ΔΙΟΣ. Combined with this head of Zeus is an eagle occupying the same position as the earlier Mamertine eagles, facing left and with a thunderbolt in its talons. On good specimens the sign Ϻ is stamped in front of the eagle. The execution of some of the obverse dies, as, for instance, nos. 105, 106 and 107, is good. It is, however, more stereotyped and does not show the artistic

workship revealed by the dies of the earlier coinage. The execution shows evidence of a superior technical skill but at the same time reveals less artistic ambition, every head being produced in the same style, with the same features and the hair arranged in the same rigid, conventional fashion. The same thing is also true of the eagle, it is in all respects the same eagle on all the earlier and good dies, nos. 105—111. This eagle resembles the eagles in the preceding series, the same small, backward thrust head and the same protruding breast. It differs, however, from the earlier eagles not only in being more skilfully executed and better proportioned but also by one characteristic feature, viz. the drawing of the feathers and the wing-coverts. A study of the feathers shows that they are represented by two parallel straight lines and the long coverts of the left wing by three parallel lines, in the same manner as we have already seen in two earlier dies, nos. 40 and 41 in Series II, Group A. Thus they are executed similarly to the eagles on the Zeus Hellanios coins of Syracuse.²³

There are several reasons why we place this group together with Groups A and B, in spite of the fact that the style differs from that of the latter and that the inferior coins show a decline not noticeable in Period I. The weight shows that they were struck on the same denomination as the lighter coins. Besides, the blanks have the same characteristic oval shape as some of the coins of Group B, from which we assume that they were cast in the same moulds, and further there are certain features in the design that remind us of the coins in Group B, as, for instance, the straight, fine lineaments and the conventional curls on the forehead (v. no. 101). Thus they cannot have been struck much later than the other coins in Series V.

Comparing these coins with the Zeus Hellanios coins we shall find a number of details indicating that the head of Zeus in Group C was modelled under the influence of the Zeus

²³ Cf. Grose, Pl. 104, 1—5.

Hellanius head. Thus, for instance, the drawing of the curls on the forehead is the same as on the coins reproduced by Grose, Pl. 104, 4, in which we also see a laurel-wreath without berries as on the Mamertine heads of Zeus. Further, the straight neck is the same. The eagles on nos. 105—111 have the same attitude as the eagle on Grose Pl. 104, 4, the legs close together and the same detail drawing. Moreover, it should be noted that the legend begins on the same side, to the right of the eagle's head. The sign  was also no doubt influenced by the monogram, symbols or letters appearing on the Zeus Hellanius coins.

PERIOD II, *c.* 278—270 B. C.

After the uniform, as far as weight and types are concerned, coinage belonging to Period I we have classified under Period II a number of coins, the divergent weight and new types of which are probably due to influences that made themselves felt during the war against Pyrrhus. The minting of these coins is assumed to have taken place during the said war and extended till the beginning of the political decline of the Mamertines about 270 B. C. Already during Period I, Series IV, a break with the earlier tradition can be traced with respect to the style and the choice of symbols, no doubt due to new impulses received by the Mamertines in their intercourse with other people. Already in Series V we meet a feature characteristic of Period II, i. e. the head on the obverse faces to left instead of to right as formerly, an influence no doubt of the Syracusan coinage struck during the time of Pyrrhus. In Period II new types were employed, such as Nike, head of Heracles, head of Adranus and Dog, all of which are foreign to earlier Mamertine coinage.

SERIES VI

Group A, Quadruple.

Obv. Head of Ares, Helmet; Rev. Nike.

Obv. Head of Ares to l., laureate; behind helmet with apex; border of dots; in front $\text{APE}^\circ \Sigma$.

Rev. Nike, clad in long chiton, standing l., with spread wings; in r. outstretched hand wreath; in l. hand stylis; border of dots; around, on nos. 117—122 beginning in l. field, on no. 123 beginning in r. field, MAMEP TINQN .

117. Winterthur 23.00 gr.

118. Munich 21.28 gr.

119. Cambridge (McClean Coll., Grose, 2415, Pl. 80, 14)
25.02 gr.

120. Chiaramonte-Bordonaro (1245) 20.35 gr.

121. Berlin (Fox Coll.) 21.35 gr.

122. Copenhagen (V. Freund 1882) 25.11 gr.

123. Berlin (Imhoof-Blumer Coll.) 18.90 gr.; Gabrieli, p. 87.

Plate XV

Group B, Unit.

Obv. Head of Ares; Rev. Nike.

Obv. Similar to the preceding; no symbol; border of dots; in front $\text{APE}^\circ \Sigma$.

Rev. Similar to the preceding; border of dots; around, beginning in l. field, MAMEP TINQN .

124. Six; Holm III, p. 736, 453 a; Phot. from casts in Winterthur; 6.93 gr.

Plate XV

In Series VI we have classed two groups of coins having the same types on the obverse, a head of Ares to left, with a helmet behind in Group A, and on the reverse the standing Nike with wreath and mast familiar from Alexander's stater. The heavier coins have an average weight of 22.20 gr. (8 specimens); only one coin of Group B is known and it has a weight of 6.93 gr.

The generally poor condition of the coins does not permit of a close study of the correlation between the various dies. So much can be said, however, on the basis of the few good specimens available that we have here a head of Ares which marks the further development of the head on coins of Period I. A comparison between this head and that on several of the dies belonging to Series V will show that they are closely related in time and that in one or two cases they may have been made by the same die-engraver. We may compare no. 122 with nos. 98 and 101 and no. 123 with no. 102. It appears as if the artist has aspired to a more natural representation. We may examine, for instance, the detail drawing of the face and the hair on nos. 121 and 122. The resemblance between the coins in Group A and those in Series V B is emphasized still more by the helmet behind the head, it is too indistinct, however, for us to be able to distinguish its exact appearance. Nor can the purely external likeness in the production of the coins of Series V B and those of Series VI A escape notice. The blanks were throughout too small for the dies and the design is for the most part indistinct, which is no doubt due to a technically uniform process in the manufacture of the coins.

The clumsy execution of the figure of Nike on the large coins indicates that it was not copied from a prototype, but the attitude of the figure and its attributes, the wreath and the mast, prove that the die-engravers had the Nike of Alexander's staters in mind. The occurrence of this Nike together with the head of Ares can only be due to the fact that these coins were minted in

connexion with some victorious war. The Mamertines seem to have been successful in their campaigns up to the time of their struggle against Hieron II, but so far as we know they achieved their greatest successes in their fight against Pyrrhus. It appears probable that during this time the Mamertines, conscious of their power, struck these heaviest coins of theirs with the figure of Alexander's Nike copied directly from Alexander's stater. Alexander's types came into fashion in south Italy and Sicily during the Pyrrhic War, as may be seen, for instance, from the occurrence of the Macedonian Pallas on the coins of Pyrrhus and on coins struck at Syracuse. Further, the head of Alexander in a lion's skin appears on the coins of Pyrrhus and Syracusan coins and also on the Mamertine coins in Series VII. It also appears as if the huge head of Ares in Series VI A with its rich flow of curls represented a more hellenised type than the previous head of Ares and as if it was considerably influenced by the figure of the Dodonaean Zeus on the south Italian tetradrachms of Pyrrhus.²⁴

Owing to the change occurring in the Mamertine coinage, which is no doubt connected with the Pyrrhic War, the striking of these coins may be dated to about 278—275 B. C., i. e. during Pyrrhus' campaign in Sicily.

SERIES VII

Group A, Double.

Obv. Head of Heracles, Sometimes { | ; Rev. Eagle.

Obv. Head of Heracles in lion's skin to l.; behind, in type *a* and in type *b* on nos. 131, 136, bow.

Rev. Eagle etc., in type *a* to l., in type *b* to r. with serpent in claws; border of dots; in type *a* around, beginning in l. field, MAMEP TINQN ; in type *b* in r. field MAMEPTINQN .

²⁴ Cf. Giesecke, *It. num.*, Pl. 14, 6 a.

Type *a*

Rev. Eagle to l.

- 125. Cambridge (Hay Coll., 245) 11.16 gr.
- 126. Berlin (Fox Coll.) 9.90 gr.; Gabrici, p. 93.
- 127. Berlin (Imhoof-Blumer Coll.) 11.40 gr.
- 128. London (BMC Sicily, p. 110, 13) 11.18 gr.
- 129. Glasgow (Hunterian Coll., MacDonald, 8) 10.53 gr.
- 130. Munich 10.62 gr.

Type *b*

Rev. Eagle to r. with serpent in claws.

- 131. Venice (Museo Correr, Catalogo, 30) 12.25 gr.
- 132. Glasgow (Hunterian Coll., MacDonald, 9) 10.82 gr.
- 133. Naples (Coll. Santangelo, Fiorelli, 7901) 9.15 gr.
- 134. Cambridge (McClean Coll., Grose, 2426, Pl. 81, 8) 8.70 gr.
- 135. Pennisi 11.35 gr.
- 136. Berlin (Imhoof-Blumer Coll.) 11.05 gr.

Plates XVI—XVII

The coins of Series VII have an average weight of 10.63 gr. (13 specimens). On the obverse is a head of Heracles, sometimes with a bow behind, and on the reverse is an eagle clasping a thunderbolt in its talons.

We have divided the coins into two types according to the position of the eagle, type *a* with the eagle facing left, and type *b* with the eagle facing right and a snake wriggling up from the left talon. All obverse dies of type *a* have a bow behind the head of Heracles. This bow is missing on coins of type *b*, but combined with one or two eagles of type *b* is a head of Heracles with a bow of type *a*, cf. nos. 131 and 136. The head of Heracles of type *a* appearing in combination with an eagle of type *b*, belongs to the

better finished dies of type *a*, cf. nos. 127 and 128, which we may assume to be later than the inferior dies nos. 125 and 126. It may thus be assumed that the eagle of type *b* and the head of the same type successively superseded the engraving on coins of type *a*. Leaving the inferior imitations on nos. 129 and 130 of type *a* out of account, we may assume a development of the head of Heracles from the head on nos. 125 and 126 to that on nos. 127, 128, 131 and 136. Thus this head was in turn followed by the ideal head we meet on dies nos. 132—135, which reaches its perfection in the head on no. 135 from Baron Pennisi's collection, a »fior di conio«, if such a thing can be spoken of in connexion with the Mamertine bronze coins.

The eagle in type *a* occupies the same position as the earlier eagles and seems to be a poor copy of those in Series IV A. It has the same upright attitude, the same small head and long neck. The legend on these coins also reminds one of that on coins of the above series: A reappears and the stems of the letters terminate in a ball. The elegantly designed eagle of type *b* on coins nos. 131—135 occupies the same position as on the coins of Series IV A, upright with protruding breast and a small backward thrust head. It is, however, better proportioned, the detail drawing is different — the short feathers of the wings and body are marked by dots and the long wing-coverts of the wholly visible left wing are on the dies for nos. 131—134 turned backwards and more extended, the web of the long wing-coverts is still drawn as oblique lines. The thunderbolt has also been given another shape.

On coin no. 136 an obverse of type *a* has been combined with a reverse of type *b*, the eagle on the latter closely resembling the eagles of type *a* but occupying the same position as the other eagles of type *b*. It is evidently a copy of the latter eagles but is the work of a die-engraver responsible for the coins of type *a*.

Another point indicating that the coins of type *b* are later than those of type *a* is that the execution of the dies of type *b*, the

excellent proportions, the firm, elegant design and the uniform letters of the legend, reminds one of the coins in Series IX, and it seems likely that the same school or die-cutter produced both series.

There are a few similarities, already mentioned, between the coins of this series and those in Series IV, which arouse the suspicion that they are not so very far apart in time. However, this series differs in three respects from the earlier coins, viz. weight, which is a few grammes higher than the earlier double, the head of Heracles and the eagle facing right with a snake in the left talon. The weight and the head of Heracles were copied by the Mamertines from a series of Syracusan bronze coins bearing a head of Heracles on the obverse and the well-known Macedonian Pallas from the coins of Pyrrhus on the reverse. The fact that we suddenly find the weight on which the Syracusan bronze coins of Hicetas and Pyrrhus were struck represented at Messana and that in a series in which the obverse is the same as that of the Syracusan Pallas coins, cannot be explained in any other way than that the Mamertine coins are imitations.²⁵ The changed type of eagle on the coins of type *b* may have been influenced by a type of eagle from the time of Pyrrhus' campaign, for it shows a striking resemblance to the eagle appearing on some Tarantine gold coins.²⁶ The pose and the proportions are the same and the thunderbolt is also the same. Where the idea of the composition with a snake wriggling up from the left foot was obtained we do not know; there may be an association of ideas between this eagle and the one on a series of coins of Aesernia, the latter also with a snake in its talons.²⁷

The coins in this series were therefore struck during the Pyrrhic War, probably during its latter part, in view of the placing of the coins belonging to Period I. We thus assume that they were

²⁵ Cf. Giesecke, *Sic. num.*, p. 99.

²⁶ Cf. Giesecke, *It. num.*, Pl. 14, 10—12.

²⁷ Cf. Grose, 155—156, Pl. 9, 4—5.

issued at about the same time as the coins in Series VI, i. e. about 278—275 B. C.

SERIES VIII

Group A, Unit.

Obv. Head of Adranus; Rev. Dog, Sometimes ϕ .

Obv. Head of Adranus, bearded, to l., wearing crested Corinthian helmet; border of dots; in front $A\Delta PAN\circ Y$.

Rev. Dog standing to r.; plain border; in type *b* above ϕ ; in exergue $MAMEPTINQN$.

Type *a*

- 137. Pennisi 4.81 gr.
- 138. Syracuse 5.5 gr.
- 139. Berlin (Fox. Coll.) 5.55 gr.
- 140. Copenhagen (C. VIII. Falbe, la Haye-Paris 1830) 5.43 gr.
- 141. Naples (Fiorelli, 4644) 5.80 gr.
- 142. Vienna 5.54 gr.

Type *b*

Rev. Above ϕ .

- 143. Munich 3.90 gr.
- 144. Chiaramonte-Bordonaro 5.29 gr.
- 145. Berlin (Imhoof-Blumer Coll.) 5.33 gr.
- 146. Glasgow (Hunterian Coll., MacDonald, 1) 5.38 gr.

Plate XVIII

The coins with the head of Adranus and Dog may be said to belong to the time of, or immediately after, the Pyrrhic War. In this series we have a unit of an average weight of 5.06 gr. (22

specimens). This weight is somewhat higher than that of the corresponding denomination in Period I, and represents a unit of the double of Series VII. The good specimens are few in number, and they present a well-drawn head, although modelled without any trace of originality, cf. nos. 137 and 139.

These coins are difficult to place within the Mamertine coinage, owing to the fact that the types do not appear on either earlier or later coinages, and the style does not reveal anything definite as to their connexion with any other series. The technique of the formation of the blanks, the height of the relief and the weight prove that the coins must be placed before Period IV. From what was said above it is absolutely clear that Period I is out of the question. That they should be assigned to approximately the same time as the coins of Series VI and VII rather than to those of Series IX is proved by the fact that the head faces left. The execution and the style also show that they are more closely connected to the preceding series, since the design is entirely devoid of the elegance characterising all the surviving coins of Series IX. But the placing of the head of the god Adranus and his dog on a series of Mamertine coins may perhaps furnish us with some guidance as to the approximate time when these coins were struck. Certainly the appearance of the god on the Mamertine coins has nothing to do with a cult of Adranus at Messana.²⁸ We know nothing whether such a cult existed there at all. But the presence of the head of Adranus and his dog on the Mamertine coins cannot imply anything else than that the town of Adranum and the famous temple of Adranus were at one time in the possession of the Mamertines. Diodorus informs us that at the time of Hieron's campaign against the Mamertines large parts of Sicily were contributory to them, and from his account it would appear as if Ameselum and other towns also belonged to the Mamertines.

²⁸ Holm, I, p. 94; Head, *Hist. num.*², p. 156 f.; Tropea, *Archivio storico Messinese*, II: Fasc. 3—4, p. 25; Mirone, *Rev. num.*, 1920, pp. 10 ff.

Ameselum is situated about 12 miles from Adranum. If the former town was in the hands of the Mamertines it is probable that the surrounding districts and very likely Adranum, too, belonged to them for some time. The conquests of the Mamertines in these regions probably took place towards the close of the war against Pyrrhus. The striking of the coins of this series may therefore be fixed to the latter part of the Pyrrhic War or immediately afterwards, i. e. about 275—270 B. C.

The head of Adranus resembles the heads of Mars on the Bruttian and Roman-Campanian coins.²⁹ Whether the head is an imitation of the head of Mars of this type so frequently appearing on coins or whether it is a copy of the famous statue of Adranus is impossible to decide.³⁰

PERIOD III, c. 270—220 B. C.


The style shows that the two series, IX and X, are contemporary with the Hieronian coinage of Syracuse. The blanks for the coins of Series IX were globular and thus belong to the period before the flat blanks came into use, while, unless restruck from coins from globular blanks, the coins of Series X were all produced from flat blanks. Further, the coins of Series X bear marks of value, a feature met with for the first time on Sicilian coins after the end of the fifth century B. C. Thus a great change takes place in this series, a change foreshadowing the pentonkia and the later Mamertine coinage. It can be seen quite plainly that this change takes place in Series X, but we do not know when it began; the marks of value prove that it occurred after the arrival of the Romans at Messana in 264 B. C. and the change may have taken place later. For the present, however, we are inclined to place Series IX before 264 B. C. and Series X after that year, but both series between about 270 B. C. and 220 B. C., i. e. within a period of about 50 years.

²⁹ Cf. Giesecke, *It. num.*, Pl. 15, 19—21, Pl. 20, 3.

³⁰ Mirone, *Rev. num.*, 1920, pp. 10 ff.

SERIES IX

Group A, Double.

Obv. Head of Ares,  ; Rev. Eagle.

Obv. Head of Ares to r., laureate; behind on no. 147 battle-axe, on no. 148 crescent, on no. 149 idem?; border of dots; in front $\Lambda\text{PE}\circ\Sigma$.



Rev. Eagle, etc. to l.; border of dots; in front $\text{MAMEPTIN}\Omega\text{N}$.

147. Syracuse (Orsi, AMIIN IV, p. 32, fig. 32) 10.1 gr.

148. Chiaramonte-Bordonaro (617) 10.18 gr.

149. Copenhagen (Ramus, 26) 8.94 gr.

*Plate XIX**Group B, Unit.*

Obv. Head of Ares, Sometimes  ; Rev. Bull, Sometimes .

Obv. Similar to the preceding; behind on no. 150 cornucopiae?, on no. 151 club?, on nos. 152—153 sword in scabbard; border of dots; in front $\Lambda\text{PE}\circ\Sigma$.

Rev. Bull charging l., etc.; on nos. 152, 153 in exergue dolphin; border of dots; above $\text{MAMEPTIN}\Omega\text{N}$.

150. Syracuse 4.8 gr.

151. Syracuse 4.8 gr.

152. Cambridge (Bunbury Coll., 372) 4.75 gr.

153. Berlin (Imhoof-Blumer Coll.) 4.50 gr.; Gabrici, p. 94.

154. Berlin (Imhoof-Blumer Coll., Imhoof-Blumer, Berl. Bl., V, p. 51, 3) 4.26 gr.; Gabrici, p. 94.

Plate XIX

Two groups are represented in Series IX, a double having an average weight of 9.74 gr. (3 specimens) and a unit having 4.62 gr. (5 specimens).

That the two groups are parallel and constituted units of one and the same monetary system is evident not only from the weight but also from the similarity in execution discernible on both obverse and reverse faces. The form and attitude of the head of Ares, the finish of the face and hair, show that they were executed with the same good technique. This is also true of the shape of the letters.

Group A. Of the coins of Group A two, or perhaps three, types are represented in the Catalogue: a type with a battle-axe behind the head of Ares and a type with a crescent. What was behind the head of Ares on the die for no. 149 cannot possibly be distinguished. The execution of the last-mentioned die differs somewhat from the earlier ones, the relief is a little higher and the face appears to be somewhat ruder in execution, which is also the case with that of the reverse, as far as can be discovered, although the specimen is somewhat worn. The best executed are the dies for no. 147, where the obverse shows a powerful and well proportioned and beautiful head of Ares, with straight features, elegant and well drawn, as also the battle-axe and the few remains of the legend. Somewhat thinner but gracefully and elegantly modelled is the head on no. 148. The reverse die was undoubtedly the same as for no. 147, but the specimen is very worn and does not admit a close examination.

Group B. It is very likely that the coins of Group A and B were struck at the same time and that parallel issues of both groups bearing identical symbols were put into circulation. In the available material, however, there are no coins of Group B bearing the same symbols as Group A. The head of Ares is narrower and more erect than in Group A, in shape it reminds us of the

head of Ares on no. 148. The bull is more elegant and better drawn than the earlier bulls.

The coins of Series IX show close resemblances to those with the head of Heracles in Series VII. This likeness applies not only to the elegant and efficient execution but is even more evident in the details. The eagles on nos. 147—149 show great agreements with some of the eagles in Series VII. By way of comparison we may examine the eagle on nos. 131 and 135. It will be seen that the eagle on nos. 147—149 occupies the same position as that on nos. 131 and 135, although the former faces to the left. As regards nos. 135 and 147, the execution is also in other respect strikingly similar in both cases: the eagle is the same, it is of the same size and has the same high breast, the wings and feathers are represented in the same manner, and the legend, composed of small and elegant letters, is inscribed between the thunderbolt and the bird's beak, as in Series VII, type *b*, between the beak and the thunderbolt. The elegantly modelled head of Heracles on no. 135 also shows the same efficient rendering as the head of Ares on no. 147. From this it is evident that this series is connected with Series VII, and the fact that the best executed dies in Series VII undoubtedly belong to the later type and are the last dies of this type justify us in drawing the conclusion that the heavier coins of Series IX replaced the Heracles coins and that the last and best executed dies for nos. 147 and 148 were probably produced by the same artist and very likely also the obverse and reverse dies for nos. 150—152 in Group B.

The characteristic types of the head of Ares on the majority of the series belonging to the first period reappear on the obverse of coins of both groups of Series IX, while an eagle adorns the reverse of the heavier coins and a bull that of the lighter ones. The head of Ares faces right, the eagle and bull left. The oldest traditions with respect to choice and direction have been pre-

served, but the relief is low and the execution reveals an elegance and proficiency unknown in earlier times: we see a new head of Ares, a new eagle and a new bull. And that a new era has dawned with foreign impulses is shown not only by the execution but also by the varying and elegantly designed symbols; we no longer meet with the helmet and the lance- or arrow-head, the symbols now appearing being an ornate battle-axe, or a sheathed sword together with less martial symbols such as the crescent and the cornucopiae. And under the bull is placed a dolphin, a feature unknown on coins belonging to the first period, and in fact the only instance in the Mamertine coinage of an allusion to Messana as a seaport.

The change in the execution noticeable in the coins of this series was probably due to external influences. A comparison between these coins and a number of coins issued by Hieron II at Syracuse will reveal some characteristic resemblances, from which it seems probable that the coins of Series IX were influenced by the latter. The head of Ares shows a striking resemblance to the portrait of Hieron on the Hieronian silver and bronze coins. If we compare the head of Ares with that of Hieron³¹ we shall see in both the same powerful, prominent nose, the same somewhat protruding lips and the same strong, projecting chin. If we examine the representation of the hair on the Syracusan coins we shall find that the curls on the head of Hieron are more elaborate than on the preceding Zeus Hellanius coins, and the style dates back to heads on coins struck under the time of Agathocles,³² although the latter are executed with a much greater refinement. If we glance at the head of Ares we shall see that the two curls on either side of the clearly marked crown of the head as well as the forward-curling locks at the back and the backward-curling

³¹ Giesecke, *Sic. num.*, Pl. 25, 6—8.

³² Cf. Head, *Num. chron.*, 1874, Pl. VIII, 1—2.

lock just below the laurel-wreath have their parallel in a number of Hieron's and Gelon's portraits.³³

There are certain signs indicating a beginning of the radical change that takes place in the Mamertine coinage after the arrival of the Romans. Thus, for instance, the relief is strikingly low in spite of the fact that the blanks were still round in shape, as appears from nos. 147 and 151, and the execution shows a refinement and technical proficiency unknown before. The weight of the coins of both series agrees with that of the bronze coins assigned by Giesecke to the first period of Hieron's reign, provided the latter coins really belonged to the date mentioned by Giesecke (*Sic. num.*, p. 118 f.).

SERIES X

Group A, Double.

Obv. Head of Ares, ☉; Rev. Athena.

Obv. Similar to the preceding; behind ☉; border of dots; in front $\text{APE}^{\circ}\Sigma$, on no. 162 $\text{APE}^{\circ}\Sigma$.

Rev. Athena advancing to r., wearing crested Corinthian helmet and long chiton; in r. hand spear; l. hand resting on shield, in side view and decorated with star; border of dots; in l. field

MAMEPTINΩN.

155. Cambridge (McClellan Coll., Grose, 2432, Pl. 81, 13) 10.57 gr.

156. Glasgow (Hunterian Coll., MacDonald, 17) 9.14 gr. Restruck on a coin of Series IX Group A. Rev. Visible outlines of hair; symbol not distinguishable.

³³ Cf. Head, *Num. chron.*, 1874, Pl. XI, 3, XII, 1, 2; Giesecke, *Sic. num.*, Pl. 25, 6—8; Grose, Pl. 104, 14, 105, 1—5, 106, 1—4.

157. Pennisi 7.68 gr.
158. Glasgow (Hunterian Coll., MacDonald, 18) 6.29 gr.
159. London (BMC Sicily, p. 111, 24) 7.58 gr.
160. Syracuse 7.6 gr.
161. Berlin (Imhoof-Blumer Coll.) 7.80 gr.; Gabrici, p. 88.
162. Berlin 8.31 gr.; Gabrici, p. 88.
163. Berlin 6.80 gr.; Gabrici, p. 88. Obv. of the same die as the preceding.
164. Copenhagen (C. VIII. Münter, 1075) 5.70 gr.
165. Syracuse 4.3 gr.
166. Berlin 7.87 gr.
167. Copenhagen (Ramus, 17) 5.02 gr.
168. Berlin (Imhoof-Blumer Coll.) 4.50 gr.

Plates XX—XXI

In this series are represented coins, with two marks of value, of an average weight of 7.24 gr. (19 specimens).

The head of Ares on the earlier dies shows a neatness of execution that reminds us of the head on the coins of Series IX. If we compare it with the head of Ares on no. 148 it will be seen that the position and shape of the head are the same, and although the representation of the features is different, the face on the dies in this series being a little finer, the difference is nevertheless exceedingly slight; the treatment of the hair, however, is the same, possibly with this difference that the curls are a little more finished in Series X and the technical proficiency seems to be greater. The likeness to the head of Ares on the coins of the preceding series that we were able to discern on the early dies disappears, however, on the others. Quite different is the rendering of the head of Ares on nos. 162—163; the face is different and the hair falls in coarse locks, the ear is not well finished. A different head of Ares meets us on the following two specimens, nos. 164 and 165, with its full, round face. The poor condition of

the subsequent dies prevents us from making a close examination of them, but it is quite evident that the execution has deteriorated. It is possible that the figure of Athena we can trace on these coins is copied from a prototype of Bellona on a series of Bruttian coins.³⁴ If we compare the two figures we note that the attitude of the body and legs is the same and that the drapery, too, is identical and falls in similar folds; otherwise there are a number of differences. Like the warrior in Series XV, Group A, the Mamertine Athena wears a Corinthian helmet, in the right hand she holds a spear and her left hand rests on a shield, the warrior's round shield.

If we try to establish the chronology of these coins in the Mamertine coinage on the basis of the likeness traced between the head of Ares on the earlier dies and that in the preceding series we may infer that the two series are closely associated in time and that the earlier coins in this series probably succeeded the heavier coins in Series IX, and moreover it is possible that the dies were executed by the same die-engraver or that at any rate they are the product of one and the same trend of style in the Mamertine coinage. The development afterwards continued and others took over the manufacture of the dies, who were not bound by the style we are able to trace in Series IX and on the first dies of Series X.

That this series is to be placed after the coins of Series IX is proved also by the fact that a coin of Group A in that series has served as blank for no. 156; it has the same diameter as these coins and the blank was globular, as is evident from the two projecting edges, on the reverse can be seen the outlines of the back of a head with hair arranged in the same manner as on the head of Ares in this series. The blanks were otherwise prepared by the later method, which was in all probability applied here for the first time. The technique of manufacturing the blanks, the resulting

³⁴ Grose, Pl. 48, 2—9.



low relief and the occurrence of marks of value thus go to prove that we are on the threshold of a new phase in the Mamertine coinage. We meet here the head of Ares with a laurel wreath and the legend for the last time. Now appears the attacking Pallas in an attitude that reappears in the attacking warrior in the next period and introduces the long series of coins bearing warriors on the reverse.

PERIOD IV, c. 220—200 B. C.

Under Period IV we have classed all the so-called pentonkia and their fractional values. As shown by their weight, the choice of type and style they form a uniform group of issues, which probably began about the time of the death of Hieron II, perhaps before, perhaps later, and they extend up to the time of the Syracusan Republic, and probably continued to be issued for some time afterwards. A characteristic feature of all groups of pentonkia is the standing, sitting or attacking warrior on the reverse. To this period we have also referred the coins of Series XVII, which, judging from the style, are nearly contemporary with Series XVI. The marks of value and the weight, however, indicate that they were not struck on the same standard of weight as the pentonkia.

SERIES XI

Group A, Pentonkion.

Obv. Head of Ares, no symbol or  ; Rev. Man leading
horse, .

Obv. Head of Ares to l., laureate, in types *b*, *c*, *d*, with taenia around the wreath; behind in type *c* helmet with neck- and cheek-

pieces and crest ending in griffin's head, in type *d* sword in scabbard; border of dots.

Rev. Horseman, wearing chlamys, advancing l., with r. hand leading horse by head; in l. hand spear resting on l. arm around which the chlamys is wrapped; in front Π ; border of dots; in r. field, on nos. 169—176, 185—208 beginning from above the head of the man, MAMEPTINQN, on nos. 177—184 beginning from above the head of the horse, MA MEPTINQN.

Type *a*

- 169. Berlin 12.12 gr.; found in Domatia at Priene.
- 170. Berlin (Imhoof-Blumer Coll.) 12.08 gr.
- 171. Reggio di Calabria.
- 172. Florence (Migliarini, 1027) 11.05 gr.
- 173. Vienna 12.06 gr.
- 174. *a*) Munich 11.22 gr. *β*) Munich 11.45 gr. Obv. of the same die as the preceding.
- 175. Naples (Fiorelli, 4612) 11.22 gr.
- 176. London (BMC Sicily, p. 112, 32) 10.69 gr. Obv. of the same die as the preceding.

Type *b*

Obv. Taenia around the wreath.

- 177. Berlin (v. Gansauge Coll.) 10.85 gr.
- 178. Venice (Museo Correr, Catalogo, 29) 12.80 gr.
- 179. Syracuse 12.2 gr.
- 180. Glasgow (Hunterian Coll., MacDonald, 24) 11.99 gr.
- 181. Berlin (Fox Coll.) 10.32 gr.
- 182. Cambridge (Bunbury Coll., 372) 12.05 gr.

183. Cambridge (Leake, Isl., p. 64, 2) 11.55 gr.
 184. α) Reggio di Calabria; β) Munich 10.34 gr.
 185. Berlin (Löbbecke Coll.) 12.35 gr.
 186. α) Syracuse 11.0 gr.; β) Munich 11.75 gr.

Type *c*

Cf. type *b*; symbol: helmet.

187. α) Glasgow (Hunterian Coll., MacDonald, 25, Pl. XV, 2) 11.60 gr.; β) Naples (Fiorelli, 4615) 11.50 gr.
 188. London (BMC Sicily, p. 112, 35) 12.38 gr.
 189. Cambridge (Weber Gift) 11.72 gr.
 190. Berlin (Löbbecke Coll.) 14.11 gr.
 191. Berlin (Fox Coll.) 12.52 gr.
 192. London (BMC Sicily, p. 112, 33) 9.20 gr.
 193. Berlin (Imhoof-Blumer Coll.) 11.53 gr.
 194. α) Copenhagen (C. VIII) 11.14 gr.; β) London.
 195. Vienna 11.80 gr.
 196. α) Pennisi 11.03 gr.; β) Reggio di Calabria.
 197. Vienna 13.50 gr.
 198. Milan (Racc. Braidense) 10.85 gr.
 199. Berlin (v. Rauch Coll.) 10.32 gr.

Type *d*

Cf. type *b*; symbol: sword.

200. α) Copenhagen (Ramus, 20) 10.90 gr.; β) Munich 12.47 gr.
 201. α) Stockholm 11.74 gr.; β) Naples (Fiorelli, 4614) 11.30 gr.;
 γ) Munich 10.12 gr. Obv. of the same die.
 202. α) Glasgow (Hunterian Coll., MacDonald, 26) 11.02 gr.;
 β) Cambridge (McClean Coll., Grose, 2441, Pl. 82, 2) 12.51 gr.
 203. Vienna 10.75 gr.

- 204. Berlin (Peytrignet Coll.) 12.94 gr.
- 205. London (BMC Sicily, p. 112, 34) 11.73 gr.
- 206. Berlin (Imhoof-Blumer Coll.) 12.27 gr.
- 207. Naples (Fiorelli, 4613) 11.60 gr.
- 208. Berlin 11.27 gr.

Plates XXII—XXVI

The coins in Series X brings us to the first group of pentonkia. The average weight is 11.40 gr. (80 specimens).

Type a. The dies of this type are so alike that it is a difficult matter to distinguish them. This is true of both the obverse and the reverse die. If we examine the man's head facing left adorning the obverse we see a beautiful, well-modelled face with straight, regular features, the ear is well finished and the hair arranged in fine curls. The difference between the dies represented in the Catalogue is often exceedingly slight and sometimes hardly discernible. Still it is possible to follow the development from die to die, from the small head on the first coins of the series right up to a somewhat larger head on nos. 175 and 176. This order, which is entirely based on the size of the head, also seems to be the correct one as regards the rendering of the details. If we examine the first two dies for nos. 169 and 170 we shall discover that the details are not executed so carefully and well as on the dies for nos. 175 and 176, where the features as well as the hair are more softly drawn and every detail more finely executed.

This slightly variable man's head reminds us of the head of Ares in the preceding two series and it is the third head modelled on the same scheme; the representation of the hair in particular proves that both heads belong to the same period and that they are of the same style and probably designed by the same school. Even if the head in Series XI makes a more massive impression, if the neck is thicker, the back of the head larger and the features more regular, it nevertheless possesses something of the same

elegance and refinement in execution as was observed in the coins of Series IX and in some coins of Series X; as mentioned above, it is especially in the rendering of the hair that we can trace the likeness. This design is confined to the preceding two series and to the dies of type *a* in this series. We note that the outlines are the same, that the two curls on either side of the parting of the hair at the back reappears and the locks under the laurel-wreath are arranged in the same manner with a curl turning backwards and upwards (cf. e. g. nos. 175 and 176 with no. 159).

The same neat execution, however, is not shown in the man with a horse on the reverse. The horse is strikingly small in proportion to the man. A parallel development may possibly be traced here to that of the man's head, for the execution of the two dies for nos. 169 and 170 (both specimens are possibly from the same die) is decidedly inferior to the succeeding dies. The body of the horse is too small, the neck too long and thin and the head is bent too much. The man is also disproportionate, the body and head are too small in proportion to the legs. The attitude of both man and horse on nos. 171 and 172 is somewhat better. The dies for nos. 175 and 176 show a more elegant execution and better proportions.

Type b. On the obverses of coins of types *b*, *c* and *d* we meet another man's head. It differs very much from the idealised, beautiful head on the coins of type *a*, it is the head of a man of mature age with strong characteristic features, a somewhat projecting nose, a protruding, strong chin, well marked lips and a large, well rendered ear. The hair is not represented so well as formerly, being arranged in somewhat coarse locks, but on the whole in the same fashion as previously. The hair at the back is somewhat longer than in type *a*, and is arranged in three curls. Further, the man has whiskers, which are absent in earlier coins. The most characteristic and conspicuous difference, however, is that the laurel-wreath is tied with a taenia in the same manner as the fairly con-

temporary coins of Tauromenium.³⁵ Among the coins of type *b* the best rendered head is that on no. 177. This head has in it something of the same elegance characterising the dies of type *a* in the matter of the presentation of the face. This is the best rendered and most harmonious face not only on the coins of type *b* but also on those of types *c* and *d*, and it probably represents the prototype of this head, and when examining the other dies one is inclined to regard the heads as more or less successful imitations of the head on no. 177. The placing of this coin at the beginning of type *b* will also be found justifiable if we glance at the reverse die. We shall then see that the finely executed obverse die is combined with the best reverse die in this group. The man and the horse are well proportioned, their attitude is good, the musculature of the man's body and of the abdomen of the horse is well modelled, the horse's neck is finely arched, its head elegantly drawn and the mane conventionally indicated. The legend begins with the two letters *MA* between the horse's head and that of the man, in contrast to the coins of type *a*, where it begins just behind the man's head. Further, the man does not hold the bridle with the right hand, which rests instead on the neck of the horse.

If we examine the following dies of type *b* we shall see that the face is, it is true, the same but that the execution cannot be compared with that of the first die. Most closely connected with no. 177 is no. 178; on the next dies the face becomes coarser and the features broader and clumsier, even if the faces we meet on nos. 181—183 are rather neatly executed. A great deterioration is, however, noticeable in no. 184. The development that the head passes through in this type corresponds to that we were able to discern in the reverse. The prototype is the finely executed group on no. 177, while another well executed group is that on no. 178. The remaining dies up to no. 184 show a gradual deterioration of the special type appearing on no. 177. On nos. 185—186 we again

³⁵ Cf. Grose, Pl. 109, 1—2.

meet a group of the same type as that on the coins of type *a* and which reappears on those of types *c* and *d*, and showing the same characteristic differences, the man holding the bridle with his right hand and lifting it on to the horse's head and the legend beginning just behind the man's head. The reverse dies nos. 185 and 186, like those of the obverse, are poorly executed.

There are several facts that argue in favour of the correctness of our placing type *b* before types *c* and *d*. As in type *a*, symbols are absent in type *b*. Further, the workmanship of the good dies of type *b* shows a closer resemblance to the dies of type *a* than to the inferior dies of the subsequent types. The coins, however, were in all probability struck at about the same time, as is evident from the similarity shown by many of the heads in the three types *b*, *c* and *d*, and also from the fact that in each series a prototype was produced with nearly the same appearance in all three types, which was later copied by less skilled workmen. This may be the explanation why we find on the inferior specimens of type *b* a reverse of a type reappearing on coins of types *c* and *d*.

Type c. On the obverse of the coins of type *c* there is a head of the same type as that in type *b*, but with this difference that behind the head there appears a helmet with crest and head of a griffin and a cheek-piece and neck-guard. The reverse represents a man and a horse of the type seen on coins of type *a* and on the later coins of type *b*. The prototypes seem to have been the figures on no. 187, the obverse and reverse of which are the best in this type. The obverse resembles that of no. 177 and no. 181, but the features are blunter and fuller, the hair longer and thicker and the whiskers more elaborate. The helmet behind the head is well executed. Thus the reverse of no. 187 is also superior from a qualitative point of view to the other specimens in this type, both man and horse remind us of, for instance, nos. 171 and 172 of type *a*. If we glance at the following dies of type *c* we shall find that the proximately following dies show a face with pointed features combined with a

group on the reverse reminiscent of no. 187. The next dies exhibit great variations on both the obverses and the reverses. Thus, on the obverse we can see in the first place a development to the face represented on nos. 193 and 194 with more rugged features, straight, short nose, projecting chin, generally a very powerful neck and behind a poorly modelled helmet, and in the second place a face which passes over nos. 195 and 196 to that seen on nos. 197, 198 and 199, a face which is larger and the nose and chin more prominent.

Type d. The head on no. 200 shows the same neatness of execution as that on the first die of type *c*. Further, the head on no. 201 resembles, for instance, that on no. 195. It is therefore evident that both types are the work of the same die-engravers. The other dies of type *d*, however, show a head with somewhat different features from that prevalent in the preceding two types. The reverse die does not differ from the earlier ones and the same dies were probably used alternately for types *c* and *d*. No. 208 may be taken as an example of the poor technical skill of the die-cutter.

As far as types *b*, *c* and *d* are concerned, we may speak of a large-output of the coins of this series, which is apparent from the large number of different dies that were evidently used during a short period. The coins of type *c* seem to have been struck in larger numbers than those of the other types. And the procedure seems to have been to have a prototype for each separate type made by a skilled die-engraver. These prototypes were then copied by less trained die-cutters and a larger number of dies of varying appearance was produced and we are able to distinguish to a certain extent the different dies within one and the same type that were made by the same hands.

The man's head in type *a* resembles the head of Ares in Series IX and X and probably also represents Ares. But it is not easy to answer the question as to what prompted the Mamertines

to exchange this well-known head, which formerly went under the name of Ares, for the head with the realistically drawn features and the laurel-wreath tied with a taenia in the following types. The following few suggestions may be submitted however. If we examine the man's head on nos. 177 and 178 and also that on the next dies we shall find that this head has a striking resemblance to the head of Hieron II on some of his silver and bronze coins.³⁶ It is the same cast of features with the projecting nose, the finely cut lips and greatly prominent chin, as also the neatly designed ear and the marked larynx. There cannot be any doubt that Hieron's features were copied on the Mamertine coins. And how closely related the Mamertine coinage was even before with the Syracusan during Hieron's days is shown by the above-mentioned treatment of the hair of the head of Ares in Series IX and X, and by the man's head in Series XI, type *a*. There is no doubt that the features we meet on the oldest dies with this man's head are those of Hieron. This head was afterwards copied by other craftsmen and at last it lost all trace of resemblance to the original prototype, as is shown already by the somewhat modified prototypes of type *c* and *d*.

No investigation of the Hieronian bronze coins has yet been made. In view of the fact that the Mamertine coins of Series XI, where type *a* shows a head with laurel-wreath — displaying the above-mentioned similarities in the representation of the hair — while type *b* and the following two types show a face closely resembling the diademed head of Hieron,³⁷ one is tempted to place these coins in connexion with a series of bronze coins of Syracuse, viz. those having a weight of about 17 gr. Among these latter coins we can distinguished two types of heads, one with a laurel-wreath, the other with a diadem. It is therefore natural to assume

³⁶ Cf. Babelon, *Catalogue de la Collection de Luynes. Monnaies grecques*, 1, Pl. L, 1361, LI, 1378.

³⁷ Cf. Babelon, Pl. L, 1361, LI, 1378.

that the man's head on the Mamertine coins crowned with a laurel-wreath, which was tied with a taenia, arose under the influence of the diademed head of Hieron, which shows a close resemblance to the images on the Mamertine coins. The laurel-wreath was retained but, in the same manner as the Pergaman coins, was encircled with a taenia. What was the motive behind the creation of this man's head we shall perhaps never know. It might possibly be an imitation of the head of Hieron intended to represent one of the Mamertine leaders. The taenia may then illustrate that the image adorning the coins is no longer that of the god Ares but of a diademed ruler. Another possibility is that Hieron's head was intentionally placed on the Mamertine coins in order to point to the good relations existing between the two states. In that way we obtain an explanation of the laurel-wreath tied with a taenia. Unlike the custom at Pergamum, where the apotheosised dead ruler was entitled to wear the laurel-wreath twined with the diadem, the symbol of the ruler — such thoughts surely never entered the minds of the Mamertines — here it is the head of Ares that has been invested with Hieron's features and crowned with his diadem. And this need not imply any friendly feeling between Messana and Syracuse, but only that the Mamertines endeavoured with the aid of the image of the renown Syracusan leader to procure wider currency for their coins in Sicily. In that case their purpose was realised, for along with the bronze coins of Hieron with the equestrian figure the Mamertine coins of the type in question are exceedingly common. They are met with everywhere in Sicily and are well represented in collections of Sicilian coins and on the market.

The same motive must certainly have played a part in the placing of the man with a horse on the reverse of the coins. This combination undoubtedly rose from a desire to produce a die having a certain likeness to and showing a certain connexion with the coins of Hieron. The horse occupies the same position

as the outermost horse of the quadriga or the biga on some of the coins of Philistides and Gelon, in which the team is in motion.³⁸ The detail treatment of the horse is the same, the representation of the mane is the same as that in the Hieronian horses on the Mamertine coins of types *a*, *c* and *d*. Further, the muscles of the abdomen and hind-quarters are represented in the same manner in the Mamertine horses as in the Syracusan, all of which details point to the Syracusan horses having been taken as the prototype of the Mamertine. The standing man, possibly crowned with a laurel-wreath (cf. no. 176), and clad in a chlamys and with a lance in his hand, represents the first of the warrior figures that later adorn the reverse of the Mamertine coins. This figure can hardly be a representation of Ares, since in all probability it is his figure that adorns the obverse of type *a*. The figure is probably that of the Mamertine warrior portrayed as a correspondence to the horseman on the Hieronian coins. The clumsy execution of the figures on the coins of type *a* indicate that they were not copied from some existing prototype. The composition was also previously thought to represent one of the Dioscuri with a horse.³⁹ The presence of a warrior with a chlamys and a lance in the following series indicates that here, too, we have a figure of the same warrior and not one of the Dioscuri.

The symbols, the helmet and the sword, in types *c* and *d* are no doubt due to influences from the Italian mainland. The placing of the Phrygian helmet on the Mamertine coins may have been intended as a manifestation of sympathy for Rome and particularly as an allusion to the helmet worn by the goddess Roma on the Roman coins. However the prototype here, as formerly, was no doubt a helmet in use at that time.⁴⁰ The same thing

³⁸ Cf. Babelon, Pl. LI, 1366, 1367, 1371.

³⁹ Cf. Grose, 2439—2442.



⁴⁰ Cf. Babelon & Blanchet, *Catalogue des bronzes antiques de la Bibliothèque Nationale*, p. 600 f., 2023; Schröder, *Jahrbuch des Kaiserlich Deut-*

probably applies also to the sword, which was a direct copy of the long sword which the Romans began to use after the Gallic War.


The resemblance shown by the head of Ares on no. 177 to the portrait of Hieron on several of the Hieronian coins indicates quite plainly that the coins in this series were struck either while Hieron was still alive or shortly after his death, at any rate under the influence of the still circulating Hieronian coins. In view of the fact that the coins of Series XI are the last ones showing the influence of the Hieronian coinage, and since we cannot assume that more than a few years at most separate them from the coins in Series XVI, which began to be minted during the time of the Republic, we may safely assume that the coins under discussion were struck about 220—216 B. C.

SERIES XII

Group A, Pentonkion.

Obv. Head of Apollo,  ; Rev. Warrior standing front, .

Obv. Head of Apollo to l., laureate; behind lyre; border of dots.

Rev. Warrior, wearing chlamys, standing front; in r. hand sword in scabbard, in l. hand spear against which rests shield, in side view, decorated with star; in r. field ; border of dots: in l. field MAMEPTINQN.

209. Berlin (Imhoof-Blumer Coll.) 13.20 gr.

210. Berlin (Löbbecke Coll.) 11.03 gr. Obv. of the same die as the preceding.

211. Berlin (v. Gansauge Coll.) 11.15 gr.

212. a) Vienna 10.61 gr.; β) Naples (Fiorelli, 4618) 9.80 gr.

213. *a*) Syracuse 12.5 gr.; *β*) Copenhagen (Ramus, 8) 10.10 gr.;
γ) Cambridge (McClellan Coll., Grose, 2443, Pl. 82, 3)
 12.36 gr.; *δ*) Vienna 9.60 gr. All the reverses are of the
 same die, which is discernible from the defect across the
 l. leg, the chlamys, and the shield.
214. Vienna 12.82 gr.
215. *a*) Naples (Fiorelli, 4619) 9.87 gr.; *β*) Munich 13.26 gr.
216. *a*) London (BMC Sicily, p. 112, 36) 10.82 gr.; *β*) London.
 Obv. of the same die.

Plate XXVII

Group B, Ounce.

Obv. Head of Apollo, ☉ ♂ : Rev. Omphalos.

Obv. Head of Apollo to l., laureate; behind in type *a* astragalos,
 in type *b* torch, in type *c* bow; border of dots.

Rev. Omphalos; border of dots; around MAMEPTINQN .

Type a

Symbol: astragalos.

217. Vienna 3.72 gr.; Eckhel, Sylloge, Pl. II, 11, Doctrina, I, 1,
 p. 224 f.; cf. Friedländer, Die oskischen Münzen, p. 60.
218. Copenhagen (Ramus, 31) 2.57 gr. By Ramus erroneously,
 star.
219. Cambridge (McClellan Coll., Grose, 2430, Pl. 81, 11) 2.26 gr.
220. Glasgow (Hunterian Coll., MacDonald, 16) 3.63 gr.;
 Eckhel, Doctrina, I, 1, p. 224.

Type b

Symbol: torch.

221. Naples (Fiorelli, 4642) 2.98 gr.
222. Berlin (Imhoof-Blumer Coll.) 2.57 gr.

Type *c*

Symbol: bow.

223. Cambridge (Bunbury Coll., 372) 2.73 gr.

224. Berlin 2.72 gr.

225. Berlin (Imhoof-Blumer Coll.) 2.53 gr.

*Plate XXVIII**Group C, Half ounce.*

Obv. Head of Apollo; Rev. Omphalos.

Obv. Similar to the preceding; no symbol.

Rev. Similar to the preceding; on nos. 226—227, 229—231 in
r. field, on no. 228 in l. field MAM.

226. London (BMC Sicily, p. 113, 50) 1.14 gr.

227. Pappalardo 1.11 gr.

228. Copenhagen (Ramus, 32) 1.40 gr.

229. Syracuse 1.3 gr.

230. Berlin 1.30 gr.

231. Munich 1.31 gr.

Plate XXVIII

Series XII comprises three groups of coins, Group A, containing pentonkia having an average weight of 11.24 gr. (25 specimens), Group B ounces of an average weight of 2.86 gr. (10 specimens) and Group C half ounces weighing 1.26 gr. (6 specimens).

Common to all three groups is a head of Apollo to left on the obverse. These are the only groups influenced by the cult of Apollo which have the obverse head facing left, and on the whole the last groups of Mamertine coins with a head to left. This seems to be a characteristic distinguishing only the first two series in

the period in which the pentonkia were struck and furnishes evidence that Series XII should be placed in proximity to the coins of the preceding series, and finally that the three groups were issued contemporarily.

Group A. On the reverse reappears the standing warrior we know from the preceding series, here without a horse, but armed with a sword and shield. He occupies nearly the same position, but is here entirely facing, the weight of the body, as in the preceding series, resting on the right foot, and over his shoulders he wears a chlamys, the right arm is hanging and in the right hand he holds a sheathed sword while the left hand rests on a lance, against which a shield reclines.

An examination of the head of Apollo will show the astonishing uniformity of the execution of the head on the different dies, and the differences are so slight that they are hardly discernible. The best head is that on the first dies for nos. 209 and 210; the face has fine, straight features with the nose on a straight line with the forehead, the chin is projecting, the neck straight and the truncation straight. The treatment of the hair differs from that in the preceding series, it is represented by straight lines, but the two curls on both sides of the point of division on the crown of the head are slightly indicated, the hair at the back is long and terminates in curls. The ear is entirely hidden by the hair, which is in front represented by a few waves. On the following dies the same head reappears, but it varies in size and the features become more pointed and the face loses some of the rigid seriousness characterising the first die. On no. 209 this head is combined with a stout and powerful warrior with a short body and swelling muscles on the arms and legs. On nos. 210 and 211 the man is taller and the body more finished. This type varies slightly on the following dies.

The head of Apollo shows too close a resemblance to the head of Apollo on a number of Rhegian coins to be passed over, for

it would seem as if the Mamertine head was a copy of the Rhegian head.⁴¹ The two heads have the same straight features, the same long, thin neck with the straight neck truncation, while the hair is essentially arranged in the same manner, and in no. 20 (Pl. 60) in Grose the laurel-wreath with the compact leaves and without berries is the same. Moreover, we should not overlook the resemblance between the standing warrior on the reverse and the standing Asklepios on another series.⁴² The position is the same, the difference being that the Mamertine warrior wears a chlamys over his shoulders and holds a sword in his right hand, the sceptre corresponds to the lance. Thus there undoubtedly existed a connexion between these two Rhegian series and the present series of Mamertines coins. And as regard time they should be nearly contemporary.

Group B. Among the earlier coins should undoubtedly be classed the well-executed coins with the astragalos, which remind us of a series of diobols in silver from Rhegium, which probably suggested the idea of these coins and of which they seem to be a direct copy.⁴³ The head of Apollo is the same, with the same features, the same straight truncation of the neck and the same representation of the hair, which is twice bound with a ribbon. Similarly, the omphalos on the reverse agrees with that on the Rhegian coins. This head of Apollo is not restricted to Rhegium, it occurs also in other parts of south Italy in combination with the omphalos. But in the same manner as Apollo and his symbols made their appearance into the Mamertine coinage via Rhegium, this definite combination as well as its further elaboration must apparently be regarded as a direct copy of Rhegian coins. With types *b* and *c*, with their respective torch and bow, the fineness in design disappears and the characteristic lack of uniformity in the

⁴¹ Cf. Grose, Pl. 60, 19—20.

⁴² Cf. Grose, Pl. 60, 23.


⁴³ Cf. *SNG* III, Pl. XII, 661.

execution of the different dies in each group can also be traced here.

Group C. The small coins belonging to Group C are reduced badly made copies of the coins of Group B.

SERIES XIII

Group A, Pentonkion.

Obv. Head of Apollo, ; Rev. Warrior standing l., Π.

Obv. Head of Apollo to r., laureate; behind lyre; border of dots.

Rev. Similar to the preceding; head in profile to l.; border of dots: in r. field Π; in l. field ΜΑΜΕΠΤΙΝΩΝ, on no. 236 ΜΑΜΑΕΠΤΙΝΩΝ.

232. Berlin (v. Rauch Coll.) 9.56 gr.

233. Naples (Fiorelli 4616) 11.41 gr.

234. α) Florence (Migliarini, 1028) 11.10 gr.; β) Vienna 11.00 gr.

235. London (BMC Sicily, p. 112, 37) 10.89 gr.

236. α) London (BMC Sicily, p. 112, 38) 10.43 gr.; β) Cambridge (McClellan Coll., Grose, 2445, Pl. 82, 4) 8.28 gr.

Obv. of the same die.

237. Copenhagen (Ramus, 9) 12.65 gr.

238. α) Vienna 11.00 gr.; β) Syracuse 9.0 gr. Obv. of the same die.

239. Glasgow (Hunterian Coll., MacDonald, 28) 11.79 gr.

240. Glasgow (Hunterian Coll., MacDonald, 29) 8.10 gr.

241. Berlin (Imhoof-Blumer Coll.) 11.38 gr.

242. Berlin (Friedländer Coll.) 8.42 gr.

243. Munich 8.63 gr.

The coins of this group have an average weight of 10.07 gr. (32 specimens). The choice of type, the head of Apollo on the obverse and the standing warrior, proves that this series should not be placed far from Series XII, Group A. A certain difference in style and execution is noticeable, however, between the two groups. There are not only such conspicuous differences as the head of Apollo to right in Series XIII and the standing warrior on the reverse showing head in profile to left, and further, the shield is not furnished with a star but appears to be undecorated on the majority of specimens, but the style, too, is entirely different both with respect to the head of Apollo on the obverse and the standing warrior on the reverse. It is another head with straight facial lines, a small chin, round cheeks, a characteristically short nape and elegantly drawn locks. It reminds us of the head of Apollo on a series of Rhegian coins with a head to right on the obverse and a wolf on the reverse.⁴⁴ The representation of the face with its fine features and round cheeks and the arrangement of the hair are the same, which proves that it is the same head of Apollo and that probably the Mamertine head was modelled on the pattern of this Rhegian head of Apollo.

The standing warrior on the reverse is more slender and graceful than the warrior in Series XII, Group A. On the more finished dies the muscles of the body are well executed (cf. nos. 232 and 236) and the folds of the mantle are represented differently. The somewhat different attitude of the warrior here from that in Series XII may be due to the fact that the warrior's attitude has to a certain extent been adapted to the standing Athena or the standing Hermes on some of the probably contemporary Rhegian coins,⁴⁵ where the attitude of the standing figure is very nearly the same with the head facing left.

The fact that a die of Series XIV, Group A, is combined with


⁴⁴ Cf. Grose, Pl. 61, 16.

⁴⁵ Cf. Grose, Pl. 61, 10, 11.

a die of this series, no. 243, proves that both groups are closely related in time and that probably one series succeeded the other. Evidence in favour of Series XIV, Group A, being later than Series XIII is that a relatively good die of the former is combined with a poor, apparently much worn die of Group A in the latter series. It is, however, difficult to decide whether the poor condition of the specimen in question is due to the dies having been worn out or to the wear of the coin itself, for even the obverse shows sign of considerable wear. If we examine the reverse die a little more closely we shall see that it is more coarsely designed than the other obverse dies in Series XIII. Further, the mantle hanging over the left shoulder and upper arm seems to be represented by straight folds as in Series XI, Group A. It is therefore possible that somewhat different types from those used in Series XIII were produced for the obverses in Series XIV, Group A, which were subsequently replaced by dies with the sitting warrior.

SERIES XIV

Group A, Pentonkion.

Obv. Head of Apollo,  ; Rev. Warrior seated, Π.

Obv. Head of Apollo to r., laureate; behind lyre; border of dots.

Rev. Warrior seated l. on chlamys spread over rocks; baldric over r. shoulder; in r. hand spear resting on r. knee; l. hand supporting head, l. arm resting on round shield, decorated with star, standing on rocks; border of dots; in l. field Π and

MAMEPTINΩN.

244. London (BMC Sicily, p. 112, 40) 11.66 gr.

245. London (BMC Sicily, p. 112, 39) 14.77 gr.

246. Syracuse 13.3 gr.
 247. *a*) Vienna 8.80 gr.; *β*) Munich 11.37 gr. Obv. of the same die.
 248. *a*) Naples (Fiorelli, 4621) 10.45 gr.; *β*) Winterthur 11.65 gr.
 249. Copenhagen (Ramus, 21) 10.04 gr.
 250. *a*) Berlin (Imhoof-Blumer Coll.) 9.45 gr.; *β*) Berlin (Imhoof-Blumer Coll.) 9.49 gr. Obv. of the same die.
 251. Berlin (v. Gansauge Coll.) 12.03 gr.
 252. Glasgow (Hunterian Coll., MacDonald, 30) 10.50 gr.
 253. *a*) Stockholm 11.79 gr.; *β*) Munich 10.03 gr. Obv. of the same die.
 254. Berlin (Friedländer Coll.) 8.15 gr.

Plates XXX—XXXI

Group B, Ounce.

Obv. Head of Apollo; Rev. Athena, Λ .

Obv. Similar to the preceding; no symbol.

Rev. Athena advancing to r., wearing crested Corinthian helmet and long chiton; r. hand resting on shield, in profile, decorated with gorgoneum; in l. hand spear; in l. field Λ ; border of dots; around, beginning in l. field, MAMEP TINOYM.

255. Pennisi (Salinas, La collezione num. Pennisi, Pl. IX, 22) 2.08 gr.
 256. Ryolo 2.05 gr.
 257. Naples (Fiorelli, 4641) 1.63 gr.
 258. Munich 2.37 gr.
 259. Naples (Fiorelli, 4640) 1.87 gr.
 260. Cambridge (Leake, Isl., p. 64, 12) 2.39 gr.

Plate XXXII

Group C, Ounce.

Obv. Head of Heracles; Rev. Nike, Λ .

Obv. Head of Heracles to r., wearing lion's skin; border of dots.

Rev. Nike standing front, wearing long chiton; in upraised r. hand wreath; in l. hand palm-branch; in r. field Λ ; border of dots; in l. field, beginning in front of r. arm, MAMEPTIN \circ YM.

261. Berlin 2.55 gr.

262. London (BMC Sicily, p. 113, 46) 2.92 gr.

263. Copenhagen (C. VIII. Rollin) 1.90 gr.

264. Berlin (Imhoof-Blumer Coll., Imhoof-Blumer, Berl. Bl., V, p. 51, 4) 2.62 gr.

Plate XXXII

Group D, Half ounce.

Obv. Head of Artemis; Rev. Omphalos, Λ .

Obv. Head of Artemis to r., with hair tied in a knot behind; wearing stephane and necklace; bow and quiver at shoulder; border of dots.

Rev. Omphalos; in exergue Λ (on nos. 265—267); border of dots; around MAMEPTIN \circ YM.

265. Cambridge (McClean Coll., Grose, 2431, Pl. 81, 12) 1.42 gr.

266. Naples (Fiorelli, 4643) 0.85 gr.

267. London (BMC Sicily, p. 113, 51) 1.14 gr.

268. Berlin 1.42 gr.

Plate XXXII

Together with the coins of Group A we have classed the coins of Groups B, C and D owing to the likeness of the heads of Apollo in Groups A and B. A common feature for Groups B, C and D is

the sign λ , which proves that they were struck at about the same time and in all probability form parallel issues. The coins of Group A have an average weight of 10.58 gr. (29 specimens), those of Group B 2.07 gr. (6 specimens), of Group C 2.50 gr. (4 specimens) and those of Group D 1.23 gr. (5 specimens). Thus we have represented here the same denominations as in Series XII, ounces and half ounces.

Group A. The reason why this series is placed in immediate proximity to the preceding two series is the appearance of the head of Apollo. This head of Apollo bears no resemblance to any head of this god on Syracusan or Rhegian coins, it seems to be, if anything, the outcome of some Mamertine artist's experiments to produce a head of Apollo. And one should note the likeness of this head to the heads on the coins of types *b*, *c* and *d* of Group A Series XI. These dies seem to be the work of the same engraver; not only is the cast of the face the same but also the delineation of the back of the head and the representation of the hair above the laurel-wreath show close resemblances. We may compare, for instance, no. 244 with no. 188, no. 247 with no. 191, no. 249 with no. 194 and no. 254 with nos. 198 and 199, etc. It is a face with marked features, a projecting nose and chin, the hair is encircled with a laurel-wreath with berries, and behind can be seen a lyre, indicating that in spite of its non-Apollonic features the head nevertheless represents Apollo. The neatness of execution characterising the dies for nos. 244 and 245 is absent in the following coarser designed heads. On the reverse we meet the Mamertine warrior in a sitting posture. The shield is of the type we know from Series X, Group A, and Series XII, Group A, and is decorated with a star. The figure is poorly modelled, the attitude is not good, and the man is not sitting, as he should, on the rock but in front of it. There does not appear to have been a prototype, the figure probably being the artist's own creation. Still, in all probability the attitude has been taken from the well-known figure

of Apollo sitting on an omphalos on the coins of the Seleucids, a type which was also imitated on Rhegian coins.⁴⁶ It is also possible that the engraver had in mind the sitting Asklepios on the Rhegian bronze coins, for the position of the legs is the same in both figures, the right leg placed in front of the left one.⁴⁷

Groups B, C and D. These three groups of small Mamertine coins, which we have classed in the same series as Group A owing to the likeness of the head of Apollo in Group B to that in Group A, closely belong together for two reasons: firstly, the best executed dies in each group show the above mentioned sign on the reverse, and, secondly, the legend on the reverse, where it is discernible, is not MAMEPTINΩN but the Oscan MAMEPTINOYM. The Oscan legend has not been observed previously on coins of Group C, but was assumed to exist only on coins classed under Groups B and D.⁴⁸

Group B. Only six specimens are available for study and none of them is in such a good condition as to furnish us with an absolutely accurate picture of the die. It is therefore impossible to discover whether several specimens are from the same die or whether six different dies were used for both the reverse and the obverse. Still it can be seen that the execution of the dies for nos. 255—257 is much superior to that of the following three dies, next comes no. 258, while nos. 259 and 260 are greatly inferior in execution, especially as regards the obverse dies.

On the obverse we see a head of Apollo to right, on the good dies for nos. 255—257 of the same appearance as that on the larger coins of Group A. We may compare no. 255 with no. 245. We see the same features, the same representation of the hair on the forehead and the curls falling down at the back, the same straight neck and neck truncation. On the reverse is a figure of

⁴⁶ Cf. Grose, Pl. 61, 9.

⁴⁷ Cf. Grose, Pl. 61, 7—8.

⁴⁸ Cf. Friedländer, *Die oskischen Münzen*, p. 60; Salinas, *La collezione num. Pennisi*, Pl. IX, 22.




Athena to right and in about the same attitude as we came across in Group A of Series X, but with this difference that the position of the lance is somewhat unlike.

Group C. The obverse of these coins have also the same sign as well as the Oscan legend. On a specimen in the British Museum, no. 262, Gardner discovered a mark of value under the chin, from which he inferred that the coin was an ounce. However, as no such marks can be traced on the other specimens, we are inclined to believe that this »mark» is a flaw in the coin. The combination of a head of Heracles and Nike is conspicuous in this period, which is otherwise characterised by Apollo and his circle and the Mamertine warrior on the reverse of the larger coins.



Group D. The coins of Group D probably represent a lower weight denomination, very likely half that of the coins of the preceding two groups. On the obverse they show a head of Artemis, evidently copied direct from the head we meet on a number of Rhegian coins.⁴⁹ The reverse has an omphalos. The group is represented by only four poor specimens. Still, on the reverses of nos. 265—267 we are able to distinguish the sign and the legend with the Oscan letters.

SERIES XV

Group A, Pentonkion.

Obv. Head of Zeus, ; Rev. Warrior,  .

Obv. Head of Zeus to r., laureate; behind thunderbolt; border of dots.

Rev. Warrior charging to r., wearing crested Corinthian helmet; in r. hand spear; on l. arm shield; in r. field ; in l. field ; border of dots; in l. field MAMEPTINQN.

⁴⁹ Cf. Grose, Pl. 61, 1—3.




269. Vienna 13.25 gr.
 270. Florence (Migliarini, 1024) 11.40 gr.
 271. London (BMC Sicily, p. 111, 29) 12.12 gr.
 272. Berlin (Löbbecke Coll.) 10.22 gr.

Plate XXXIII

Group B, Four ounces?

Obv. Head of Apollo,  ; Rev. Warrior,  .

Obv. Head of Apollo to r., laureate; behind in type *a* strung bow, in type *b* arrow-head upwards, in type *c* torch; border of dots.

Rev. Warrior charging to r.; in upraised r. hand spear; on l. arm shield; at l. side sword; in r. field ; sometimes monogram (on no. 273 between legs , on no. 274 in l. field A, on no. 276 in l. field ); plain border; in l. field MAMEPTINQN.

Type *a*

Symbol: bow.

273. Berlin (Imhoof-Blumer Coll.) 8.80 gr.
 274. Berlin (Löbbecke Coll.) 7.74 gr.
 275. Berlin (Imhoof-Blumer Coll.) 7.90 gr.
 276. London (BMC Sicily, p. 110, 22) 7.11 gr.
 277. London (BMC Sicily, p. 110, 23).
 278. Florence (Migliarini, 1035) 7.80 gr.

Type *b*

Symbol: arrow-head.

279. Syracuse 8.7 gr.
 280. München 7.92 gr.

Type *c*

Symbol: torch.

281. Cambridge (McClellan Coll., Grose, 2427, Pl. 81, 9) 9.46 gr.

282. Cambridge (Bunbury Coll., 372) 9.55 gr.

*Plate XXXIV**Group C, Three ounces?*Obv. Head of Zeus, $\overline{\text{P}}$; Rev. Hermes.

Obv. Head of Zeus to r., laureate; border of dots; behind on nos. 283—286 $\overline{\text{P}}$ and beneath $\Delta\iota\omicron\Sigma$, on no. 287 only $\overline{\text{P}}$.

Rev. Hermes standing l., wearing petasos and chlamys over l. shoulder; in r. hand branch; in l. hand caduceus; in front ram, standing on hind legs and looking up at him; borders of dots; on no. 283, beginning in l. field, MAMEP TINQN , on no. 285 in l. field MAMEP , on no. 287, backwards, beginning from behind l. foot, NQN ITPMAM .

283. London (BMC Sicily, p. 113, 47); Mirone, Rev. num., 1920, p. 32, Pl. II, 28; 6.50 gr.

284. Berlin (Imhoof-Blumer Coll.) 5.27 gr.

285. Pennisi 6.24 gr.

286. London (BMC Sicily, p. 113, 48) 5.77 gr.

287. a) Syracuse (Orsi, AMIIN IV, p. 32, fig. 33) 5.7 gr.;
 β) Syracuse 6.1 gr.

288. Berlin 5.84 gr.

289. Berlin (Löbbecke Coll.) 6.24 gr.

290. Berlin (Imhoof-Blumer Coll.) 5.17 gr.

Plate XXXV

Group D, Ounce.

Obv. Head of Aphrodite,  ; Rev. Warrior,  $\overline{\text{P}}$.

Obv. Head of Aphrodite to r., with hair tied in knot behind, wearing single-drop earring and necklace; behind dove; border of dots.

Rev. Naked warrior, laureate, standing l., resting l. hand on sword; in r. hand spear; in l. field trophy of armour(?), beneath which is $\overline{\text{P}}$; border of dots; in r. field, beginning behind head, MAM ...

291. Berlin (Löbbecke Coll.), 2.08 gr.

292. Berlin 2.10 gr.

293. Cambridge (McClean Coll., Grose, 2429, Pl. 81, 10) 1.55 gr.

294. Cambridge (Bunbury Coll., 372) 1.78 gr.

295. London (BMC Sicily, p. 113, 49) 2.33 gr.

296. Berlin (Imhoof-Blumer Coll., Imhoof-Blumer, Berl. Bl., V, p. 52, 6) 2.05 gr.

297. Berlin 2.19 gr.

Plate XXXVI

Group E, Ounce.

Obv. Head of Ares; Rev. Lyre, on no. 299 $\overline{\text{P}}$.

Obv. Head of Ares to r., wearing crested Corinthian helmet; border of dots; in front APE \circ Σ .

Rev. Lyre; in r. field on no. 299 $\overline{\text{P}}$; border of dots; in l. field MAMEPTINQN.

298. Berlin (Löbbecke Coll.) 2.82 gr.

299. Berlin 2.67 gr.

300. Berlin (Peytrignet Coll.) 2.82 gr.

Plate XXXVI

Group F, Ounce.

Obv. Head of Artemis; Rev. Dog \mathfrak{P} .

Obv. Head of Artemis to r., with hair tied in knot behind, wearing single-drop earring and necklace and in type *b* stephane; at shoulder bow and quiver; border of dots.

Rev. Dog to l., head turned to r., r. fore-leg raised; under fore-leg \mathfrak{P} ; border of dots; beginning to r. of head MAM.

Type a

Obv. Head of Artemis without stephane.

301. Pappalardo 2.10 gr.

Type b

Obv. Head of Artemis with stephane.

302. Chiaramonte-Bordonaro 2.53 gr.

Plate XXXVI

In Series XV we have classed 6 groups, Group A containing pentonkia with an average weight of 11.62 gr. (5 specimens), Group B consisting of 4 ounces with an average weight of 8.69 gr. (16 specimens), Group C of 3 ounces with an average weight of 6.02 gr. (11 specimens), Group D of ounces with an average weight of 2.03 gr. (10 specimens), Group E of ounces having an average weight of 2.78 gr. (4 specimens) and Group F of ounces of an average weight of 1.99 gr. (3 specimens). A common feature for all these coins is the presence of the monogram or sign \mathfrak{P} on either the obverse or the reverse, which indicates that they are contemporary and were in all probability parallel issues of different denominations on the same standard. The issue of coins of Group A was not large, and possibly the coins of Groups B and C superseded the pentonkia for some time. The types in

Group B are also a direct continuation of the types in Groups A of Series XII, XIII and XIV.

Group A. Certain facts seem to indicate that the prototype of the obverse and reverse types in Group A was a series of Bruttian bronze coins, bearing a head of Zeus on the obverse and an attacking warrior with helmet, lance and shield on the reverse.⁵⁰ The Mamertine head of Zeus with the thunderbolt behind is no doubt a copy of the Bruttian, for on the former we find the curl on the forehead characteristic of the Bruttian head of Zeus, the straight hair on the crown and the locks falling down to the back of the neck, the low forehead, the straight, powerful nose, the moustache and the straight truncation of the neck. The figure of the warrior, differing from that in the earlier series is probably also a copy of the Bruttian warrior. He takes up the same stooping, attacking attitude as the latter. The two figures differ only in the matter of equipment: the Mamertine soldier wears a Corinthian helmet and the round shield familiar from the earlier representations of Mamertine soldiers, whereas the Bruttian warrior carries an oval shield and wears an Italian helmet. The legend is also placed in the same place, in the left field behind the soldier.

The notion of placing the head of Zeus with the thunderbolt and an attacking soldier on the Mamertine coins was thus undoubtedly obtained from the numerous Bruttian coins of this type. With regard to the rendering of, for instance, the head of Zeus on no. 269, it will be seen that this head shows striking resemblances to several dies in Group A of the preceding series. We may, for example, compare it with the head of Apollo on nos. 244, 245 and 249. It thus appears as if both groups were produced by the same die-engravers.

Group B. Connected by the sign \overline{P} with the above group are the coins of Group B. The head of Apollo is a development of the head in Series XIV, Group A, but the style on the two good dies

⁵⁰ Cf. Grose, Pl. 48, 10—11.

for nos. 273 and 274 is purer, the design is, however, more simplified and the lines more clear-cut. According to the symbols the coins are divided into types: only three types are known with a bow, arrow-head and torch respectively. The soldier is probably intended as a continuation of the soldier in the previous series. While the $\overline{\text{P}}$ may represent the monogram of some official, the letters EC, A and E, faintly discernible on one or two of the coins, possibly represent the die-engraver's signature.

Group C. There is an unmistakable resemblance between the head of Zeus on the coins of Group A and that on the generally poorly executed coins of Group C (cf. for instance, nos. 283 and 271). The appearance of Hermes on Mamertine coins is probably due to the influence of the Rhegian coinage, and there is no doubt that the prototype was the standing Hermes on a series of Rhegian coins.⁵¹

Group D. The prototype of a woman's head with a dove behind that we meet in coins of Group D cannot be found among the Rhegian coins. Possibly the figure is that of the famous Venus Erycina, whose cult increased greatly during the Roman period. Orsi calls it the head of Pelorias or Artemis (AMIIN IV, p. 33). On the reverse we find the Mamertine soldier with a lance in his right hand and the left hand resting on a sheathed sword. On no. 294 it can be plainly seen that he wears a laurel-wreath.

Group E. The head of Ares with helmet is probably also due to an Italian influence, and we may partly think of the head of Ares on the so-called Roman-Campanian coins with the head of a horse or a galoping horse on the reverse,⁵² partly of the head of Ares on the Bruttian coins.⁵³ The lyre probably originates from the Rhegian coins showing exactly the same lyre.⁵⁴

⁵¹ Cf. Grose, Pl. 61, 11.

⁵² Cf. Grueber, *Coins of the Roman Republic in the British Museum*, III, Pl. LXXIV, 13, 15, 16—18.

⁵³ Cf. Grose, Pl. 48, 2—8.

⁵⁴ Cf. Grose, Pl. 61, 3, 13.

Group F. Only two coins of this group are represented, apparently of two different types, both with a head of Artemis with the hair tied in a knot at the back on the obverse, on the coin of type *b* she wears a stephane, which is missing on the specimen of type *a*. On the type *a* specimen quivers and a bow can be plainly seen behind, which are either missing in type *b* or are at any rate not discernible on the available specimen. The head of Artemis is obviously derived from the Rhegian coins. The head of type *a* is the same as that found on a Rhegian coin bearing a sitting Apollo, of Seleucid origin, on the reverse⁵⁵ and the head of Artemis with a stephane is the same as that on several groups of Rhegian coins.⁵⁶





The coins of the different groups in Series XV were in all probability struck before those of Series XVI, which is plainly evident from the fact that the style in Series XVI reveals a gradual decline, a feature which excludes the possibility of Series XV having been struck after Series XVI, which is undoubtedly to be regarded as the last series of pentonkia on the denomination mentioned above. There are several reasons, however, that indicate that they should be placed somewhere here. If we glance, for instance, at the head of Zeus on no. 269 we shall see that it shows close resemblances to the head in Series XIV, Group A. The face is nearly the same as that on no. 245, the truncation of the neck is straight as in Series XIII and XIV and the hair is coarse and straggling as in previous series. Thus this head of Zeus cannot be placed anywhere else than between the head of Apollo in Series XIV and the head of Zeus in Series XVI, the frequently elegantly designed warrior in the latter no doubt representing a development of the figure in this group.


⁵⁵ Cf. Grose, Pl. 61, 9.

⁵⁶ Cf. Grose, Pl. 60, 21, 23, 61, 1—3, 13.

SERIES XVI

Group A, Pentonkion.

Obv. Head of Zeus, no symbol or     ;

Rev. Warrior, .

Obv. Head of Zeus to r., laureate, behind in type *b* club, in type *c* spear-head, in type *d* star, in type *e* crescent, in type *f* cornucopiae, in type *g* pentagram; border of dots.

Rev. Warrior charging r., wearing crested Roman helmet; in r. hand spear; on l. arm shield; in r. field Π (missing on nos. 352—353, type *e*); border of dots; in l. field MAMEPTINQN.

Type *a*

303. London 12.32 gr.

304. Naples (Fiorelli, 4625) 12.15 gr.

305. Naples (Fiorelli, 4623) 11.25 gr.

306. Munich 11.51 gr.

307. Vienna 11.41 gr.

308. *a*) Stockholm 12.26 gr.; *β*) Syracuse 11.4 gr.

309. Pennisi 9.82 gr.

310. London 11.21 gr.

311. Berlin (Fox Coll.) 14.00 gr.

312. Berlin 9.79 gr.

313. Cambridge (General Coll.) 11.30 gr.

314. Cambridge (General Coll.) 11.77 gr.

315. Cambridge (Leake, Isl., 64, 1) 10.44 gr.

316. *a*) Milan (Racc. Braidense) 9.15 gr.; *β*) Syracuse 11.0 gr.

317. Berlin (Friedländer Coll.) 11.33 gr.

318. Naples (Fiorelli, 4624) 10.05 gr.

319. London (BMC Sicily, p. 111, 25) 10.11 gr.

Type *b*

Symbol: club.

- 320. Berlin (Imhoof-Blumer Coll.) 10.21 gr.
- 321. Berlin (Imhoof-Blumer Coll.) 12.52 gr.
- 322. Cambridge (Bunbury Coll., 372) 13.01 gr.
- 323. Glasgow (Hunterian Coll., MacDonald, 21) 11.66 gr.
- 324. Florence (Migliarini, 1022) 12.30 gr.
- 325. Munich 10.60 gr.
- 326. Copenhagen 10.32 gr.
- 327. Vienna 8.84 gr.
- 328. London (BMC Sicily, p. 111, 27) 11.60 gr.
- 329. Berlin (Vermächtnis H. Dressel) 12.70 gr.
- 330. Syracuse 9.4 gr.
- 331. Florence (Migliarini, 1023) 12.80 gr.
- 332. Cambridge (Bunbury Coll., 371) 12.70 gr.
- 333. Syracuse 11.2 gr.
- 334. α) Munich 12.08 gr.; β) Munich 7.92 gr.
- 335. Cambridge (General Coll.) 11.23 gr.
- 336. Munich 10.42 gr.
- 337. Munich 10.37 gr.

Type *c*

Symbol: spear-head.

- 338. Copenhagen (C. VIII. Falbe, Nauplia-Athens 1834—35)
10.45 gr.
- 339. Glasgow (Hunterian Coll., MacDonald, 22) 8.10 gr.
- 340. Cambridge (McClean Coll., Grose, 2435) 10.84 gr.
- 341. Cambridge (General Coll.) 11.44 gr.
- 342. Copenhagen (Ramus, 11) 12.07 gr.
- 343. London (BMC Sicily, p. 111, 28) 10.24 gr.

Type *d*

Symbol: star.

- 344. Copenhagen (Ramus, 12) 12.75 gr.
- 345. Glasgow (Hunterian Coll., MacDonald, 20) 12.05 gr.
- 346. Naples (Fiorelli, 4626) 12.90 gr.
- 347. Cambridge (McClean Coll., Grose, 2436) 10.67 gr.

Type *e*

Symbol: crescent.

- 348. Vienna 11.22 gr.
- 349. Munich 10.70 gr.
- 350. London 12.24 gr.
- 351. Glasgow (Hunterian Coll., MacDonald, 19) 11.15 gr.
- 352. Berlin 12.93 gr.
- 353. Vienna 15.47 gr.
- 354. Cambridge (McClean Coll., Grose, 2437) 10.13 gr. Rev.
of the same dies as the preceding.

Type *f*

Symbol: cornucopiae.

- 355. Naples (Coll. Santagelo, Fiorelli, 7943) 9.52 gr.
- 356. Paris (Coll. de Luynes, Babelon, 1030, Pl. XXXVIII)
10.42 gr.

Type *g*

Symbol: pentagram.

- 357. α) Munich 13.01 gr.; β) Syracuse 11.8 gr.
- 358. Berlin (Löbbecke Coll.) 12.82 gr.

- 359. Glasgow (Hunterian Coll., MacDonald, 23) 14.19 gr.
- 360. Berlin 9.92 gr.
- 361. Florence (Migliarini, 1023) 12.35 gr.
- 362. Winterthur 10.20 gr.
- 363. London (BMC Sicily, p. 111, 30) 10.82 gr.
- 364. Cambridge (McClean Coll., Grose, 2438, Pl. 82, 1) 9.71 gr.

Plates XXXVII—XLIII

Only one group is represented in this series, and it consists of pentonkia with an average weight of 10.91 gr. (124 specimens). Both the head of Zeus and the warrior show a number of characteristic differences from the same types in earlier series. The technical execution of the good dies is especially conspicuous: the firmly drawn faces and the gracefully arranged locks and the frequently well proportioned warrior. It is the same elegant but expressionless style that we meet on the Republican coins from Syracuse, technically more ornate and elegant than the style on the Hieronian coins but more superficial and less artistic.

The types divided according to the symbols are arranged on the basis of the decline in execution shown in the respective types. Thus we find the relatively best dies in type *a*, with a well proportioned head of Ares with at first straight, afterwards gradually more irregular, features. This irregularity becomes still more accentuated in the following type with a club behind the head of Zeus, a degeneration being already noticeable in a number of dies (cf. for instance, nos. 329—334). In type *c* there reappears one of the superior heads in type *b* (cf. nos. 341 and 323) and all existing specimens show a good execution, but a noticeable deterioration in execution takes place in type *d* (v. no. 347), and the dies in types *e*, *f* and *g* all show a rapid decline. The same development can be traced on the reverse, the warrior occupying in types *a—f* the same attitude as in Group A Series XV, while in type *g* he has the same attitude as in Group B Series XV, but

with this difference that here he wears a helmet of the same type as the other warriors in this group. A characteristic feature of this group, however, is that the soldier does not wear the same helmet as Series XV Group A, he wears instead the Roman helmet we meet on the Roman uncia and in a somewhat altered form on the Roman denarius. The symbols we meet with here are characteristic of the Roman and the Italian coinage from the third century B. C., from which they very probably originate.

The well rendered head of Zeus on the good dies, e. g. nos. 303—310 and no. 316, reminds us of the head of Zeus on a number of Syracusan silver coins from the time of the Republic between 215 and 212 B. C. A close examination will show that the Mamertine head of Zeus is no doubt a direct copy of the Syracusan. If we compare, for instance, nos. 309 and 316 with the head reproduced by Grose⁵⁷ we shall see that the representation of the ring of curls before the laurel-wreath shows striking resemblances, such as, for instance, the little upright curl on the forehead and the hair at the back, and moreover the beard is represented in the same manner. Thus there cannot be any doubt that the good Mamertine dies were executed by die-engravers trained in the Syracusan technique and having the Syracusan head of Zeus as a prototype. The striking of this series was thus begun in the time of the Republic and probably towards the end of that time, judging from the fact that the head of Zeus rapidly changes in appearance and shows a rapid decline, which could only have occurred after the capture of Syracuse by the Romans and the cessation of the Republican coinage. As shown by this decline, the issue of the coins in Series XVI was continued after the arrival of the Romans. We may therefore assume that this series was struck from about 212 to 200 B. C.

⁵⁷ Pl. 107, 9.

SERIES XVII

Group A, Two chalkoi.

Obv. Head of Heracles; Rev. Artemis, $\times 11$.

Obv. Head of Heracles to r., wearing lion's skin; border of dots.

Rev. Artemis running r., clad in short chiton and andromides; at r. shoulder arrow and quiver; in hands flaming torch; at her feet dog running r.; border of dots; in r. field under the torch $\times 11$; in l. field MAMEPTINQN .

365. Berlin (Imhoof-Blumer Coll.) 8.45 gr.

366. Glasgow (Hunterian Coll., MacDonald, 32, Pl. XV, 3)
8.10 gr.

367. Copenhagen (C. VIII. Rollin) 8.56 gr.

368. Cambridge (Hay Coll., 245) 7.70 gr.

369. Berlin (Löbbecke Coll.) 8.89 gr.

370. Berlin (Fox Coll.) 8.72 gr.

Plate XLIV

The coins in Series XVII should be approximately contemporary with the better coins of Series XVI. The average weight is 7.98 gr. (16 specimens). The value mark XII = XAAKOI II⁵⁸ indicates that we have here a standard differing from that employed during Period IV. The style, however, proves quite clearly that we are dealing with a group of coins struck at about the same times as the coins of Series XV and XVI. The rendering of the head of Heracles and of Artemis reminds us of some of the better dies in Series XVI, we observe the same good proportions, the same firm representation, and further the attitude of Artemis is the same as that of the warrior in Series XVI. The ornamental and well-made legend is also the same as on the good dies of Series XVI. We come across Artemis and a dog also on the Republican coins

⁵⁸ Cf. Giesecke, *Sic. num.*, p. 127.



of Syracuse and the goddess as well as the head of Zeus were probably copied from these coins.⁵⁹

PERIOD V, c. 200—35 B. C.

Under Period V we have grouped the remaining series of Mamertine coins. All these series of coins are sporadic issues extending from about 200 B. C. to about 35 B. C. In style and execution they are Italian or Roman Provincial and it can be plainly seen that the direct influence of the Greek-Sicilian and Greek-South Italian coinages has come to an end. The series reveal a steady fall in the value of bronze which may have run parallelly with the fall of the Roman ass.


SERIES XVIII

Group A, Five ounces.

Obv. Head of Zeus  ; Rev. Warrior .

Obv. Head of Zeus to r., laureate; behind thunderbolt; border of dots.



Rev. Warrior charging l., wearing crested Corinthian helmet; in r. hand spear; on l. arm round shield, decorated with star; in


l. field  (on nos. 371—372 beneath shield, on no. 373 one pellet above and four beneath, on nos. 374—376 two above and three beneath); border of dots; in r. field (on no. 373 beginning in front of head) MAMEPTINQN.


⁵⁹ Cf. Grose, Pl. 107, 4—6.

371. Paris (Coll. de Luynes, Babelon, 1029, Pl. XXXVIII)
15.07 gr.
372. Stockholm 18.03 gr.
373. Pennisi 17.08 gr.
374. Berlin (Löbbecke Coll.) 15.84 gr.
375. London 18.16 gr.
376. Copenhagen (C. VIII. Falbe, Paris 1833); Imhoof-Blumer,
Monnaies grecques, p. 22, 39, Pl. B 6; Gabrici, p. 100;
14.45 gr.


*Plate XLV**Group B, Three ounces.*

Obv. Head of Apollo, ; Rev. Nike,  in type *a* on Obv.,
in type *b* on Rev.

Obv. Head of Apollo, to r., laureate; behind in type *a* lyre,
in type *b* tripod lebes with wheel handles; border of dots; in type
a behind head .


Rev. Nike, clad in chiton, standing l., with spread wings; in
r. outstretched hand wreath; in l. hand palm-branch; border of
dots; in type *b* in l. field ; in l. field MAMEPTINQN.

Type a

Symbol: lyre; Obv. .

377. London (BMC Sicily, p. 112, 41) 13.22 gr.

Type b

Symbol: tripod lebes; Rev .

378. Chiaramonte-Bordonaro (738) 10.20 gr.
379. Palermo (Gabrici, p. 148, 2, Pl. VII, 31) 11.01 gr.

380. Cambridge (Leake, *Isl.*, p. 64, 6) 10.71 gr.

381. Vienna 9.98 gr.

Plate XLVI

In Series XVIII we have classed two denominations in Groups A and B respectively. The coins in Group A are provided with five marks of value and have an average weight of 16.44 gr. (6 specimens), while those in Group B have three marks of value and an average weight of 11.02 gr. (5 specimens). The marks of value show that the denominations represented are a quincunx and a quadrans on an Italian standard.

The similarity in style and execution prove that we have before us two parallel issues. In both these groups the style is coarser than formerly, which indicates that they were not produced under the immediate influence of the Greek coinage of Syracuse or of south Italy. The design is rude and clumsy in the case of the obverse and the reverse types.

Group A. The head of Zeus is the same as that in Series XV, Group A, although the rendering is coarser. It represents the type familiar from the Bruttian coins and from the Roman victoriatas and others, and was in all probability inspired by these coins. The warrior on the reverse, however, is the one seen on coins of Series XV, Group A, but in a more stooping attitude. It therefore seems to be the warrior of the Bruttian coins copied, seen in a back view.

Group B. Just as the head of Zeus and the warrior may have originated from the Bruttian coins so may the head of Apollo and Nike have been derived from the same source. Among the Bruttian coinage we find a series with a head of Apollo closely resembling the Mamertine head and which may have been the prototype of the latter.⁶⁰ The figure of Nike may also be a copy of the trophy-crowning Nike on another series of Bruttian coins,⁶¹ familiar also from the Roman victoriatas.

⁶⁰ Cf. Grose, Pl. 48, 1.

⁶¹ Cf. Grose, Pl. 49, 8—10.


The style, types and weight indicate that the coins of this series were struck under the influence of the Roman-Italian bronze coinage. The weight is approximate to that of the Roman sextantal ass and thus higher than that of the earlier pentonkia. The few existing specimens indicate, however, that these coins constitute an incidental issue. As shown by the five marks of value, we may here have a casual issue of a south Italian quincunx and quadrans respectively.⁶² Judging from the style, they were issued on some occasion after the minting of the earlier pentonkia had been discontinued, possibly about 200 B. C.

SERIES XIX

Group A, Three ounces.

Obv. Head of Apollo,  , Rev. Nike .

Obv. Head of Apollo to r., laureate; behind in type *a* plectrum, in type *b* lyre, in type *c* tripod lebes; border of dots.

Rev. Nike etc.; border of dots; in l. field  and (on nos. 387—391 beginning above the wreath and continuing in r. field) MAMEPTINQN.

Type *a*

Symbol: plectrum.

382. Syracuse 6.7 gr.

383. Glasgow (Hunterian Coll., MacDonald, 31) 7.97 gr.

384. Copenhagen (C. VIII. Ardit, Naples) 7.15 gr.

385. Berlin (Fox Coll.) 6.69 gr.

⁶² Compare the quincunces and quadrantes in Teate and Venuisa, e. g. Grose, 476—479, Pl. 19, 2—5; 489—491, Pl. 19, 11—13.

Type *b*

Symbol: lyre.

386. Berlin 8.15 gr.

387. Berlin (Imhoof-Blumer Coll.) 7.32 gr.

Type *c*

Symbol: tripod lebes.

388. Berlin 6.45 gr.

389. Berlin (Peytrignet Coll.) 7.17 gr.

390. London (BMC Sicily, p. 113, 45) 7.19 gr.

391. London (BMC Sicily, p. 113, 44) 7.00 gr.

Plate XLVII

SERIES XX

Group A, Six ounces.

Obv. Head of Apollo, ☉ ; Rev. Nike ☉☉☉.

Obv. Head of Apollo to r., laureate; behind lyre; border of dots.

Rev. Nike etc.; border of dots; in r. field ☉☉☉; in l. field
MAMEPTI NQN or MAMEPT INQN.

392. Berlin 7.87 gr.

393. Cambridge (Leake, Isl., p. 64, 7) 9.16 gr.

394. Berlin (v. Rauch Coll.) 8.75 gr.

395. London (BMC Sicily, p. 113, 42) 9.84 gr.

396. Naples (Fiorelli, 4631) 7.65 gr.

397. Syracuse 9.3 gr.

398. Naples (Fiorelli, 4630) 8.62 gr.




399. London (BMC Sicily, p. 113, 43) 8.75 gr.

Plate XLVIII



Both series are closely related to each other, the types being the same: head of Apollo and standing Nike. In Series XIX we have a quadrans on the uncial standard with an average weight of 7.03 gr. (25 specimens) and in Series XX a semis approaching the semuncial standard and having an average weight of 8.82 gr. (20 specimens). The coins show evidence of a decline in style and execution, even if some fairly good specimens exist (cf. nos. 382 and 393).

SERIES XXI

Group A, Four ounces.

Obv. Head of Ares in Roman helmet, ; Rev. Female figure,  or .

Obv. Head of Ares to r., wearing Roman helmet; behind in type *a* arrow-head upwards, in type *b* sword in scabbard; border of dots.

Rev. Female figure standing l., leaning with l. arm against pillar; in r. hand patera; in l. hand spear; border of dots; in l. field  or on nos. 403 and 404  and, beginning above the patera and continuing in r. field, MAMEP TINQN.

Type *a*

Symbol: arrow-head.

400. Berlin (Fox Coll.) 5.69 gr.

401. Glasgow (Hunterian Coll., MacDonald, III, Addenda, p. 742) 5.51 gr.

Type *b*

Symbol: sword in scabbard.

402. Berlin (Imhoof-Blumer Coll.) 6.70 gr.

403. Berlin (Imhoof-Blumer Coll.) 5.95 gr.

404. Winterthur 4.80 gr.

The average weight of the coins of this series is 5.73 gr. (5 specimens). We have thus arrived at a triens approximate to the semuncial standard. On the coins we meet a head of Ares surmounted by a Roman helmet and on the reverse probably a standing Athena, although the poor condition of the coins does not allow a close study. The coins bear the impress of a purely Roman influence.

SERIES XXII

Group A, Pentonkion.

Obv. Head of Zeus; Rev. Warrior, Π.

Obv. Head of Zeus to r., laureate, border of dots.

Rev. Warrior charging r., wearing crested helmet; at l. side sword; in r. hand spear; on l. arm shield; plain border; in r. field Π; in l. field ΜΑΜΕΠΤΙΝΩΝ, on no. 415 with ΜΕ.

405. Syracuse 4.5 gr.

406. Syracuse 4.7 gr.

407. Munich 3.51 gr.

408. Munich 4.31 gr.

409. Munich 3.35 gr.

410. London (BMC Sicily, p. 111, 31) 3.30 gr.

411. Ryolo 3.71 gr.

412. Naples (Fiorelli, 4637) 4.57 gr.

413. Vienna 5.04 gr.

414. Berlin (Imhoof-Blumer Coll.) 3.15 gr.

415. Berlin (Löbbecke Coll.) 5.02 gr.

416. Berlin (Löbbecke Coll.) 3.04 gr.

417. Cambridge (Bunbury Coll., 372) 3.84 gr.

418. Cambridge (McClellan Coll., Grose, 2448, Pl. 82, 7) 4.19 gr.

Group B, Ounce?

Obv. Head of Apollo; Rev. Artemis.

Obv. Head of Apollo to r., laureate; border of dots.

Rev. Artemis standing l., clad in short chiton and andromides; in r. hand patera; in l. hand spear; at her feet dog running l.; plain border; around, beginning in r. field, ΜΑΜΕΡΤΙ ΝΩΝ.

419. Syracuse 1.8 gr.

420. Naples (Coll. Santangelo, Fiorelli, 7997) 2.05 gr.

421. Chiaramonte-Bordonaro (871) 1.86 gr.

Plate LI

In Series XXII we have classed two groups, Group A containing pentonkia with an average weight of 4.09 gr. (22 specimens), and Group B consisting of coins having an average weight of 1.90 gr. (3 specimens). These coins were therefore probably struck on the semuncial standard. The similarity in style and execution indicate that the coins belong to contemporary issues.

If we glance at the coins of Group A it will be noted that the obverse shows an originally designed head and that each die is an attempt to represent a portrait. The warrior on the reverse is the Mamertine warrior in Series XVI girded with a sword and holding a lance in the same attitude as on coins of type *g*. These coins show a striking resemblance to a number of Palermitan and Roman-Palermitan coins from the beginning of the first century B. C. and are very likely contemporary with the latter.⁶³ From these latter coins the Mamertines probably conceived the idea of readopting the earlier tradition of a head of Zeus and warrior; in the designing of the obverse and reverse types as well as in the form of the letters⁶⁴ we can trace the influence of

⁶³ Bahrfeldt, *Rev. suisse*, XII, 1905, pp. 384 ff.; Grose, 2510 ff., Pl. 85, 8 ff.; Gabrieli, p. 154 f., 22 ff., p. 158 f., 199 ff.

⁶⁴ Compare **ME** on no. 415 with the monogram of **NE tellus**, Bahrfeldt, p. 392, 45.

these coins. The Palermitan coins in particular, which are of the same weight as the Mamertine, were undoubtedly the pattern of the coins of this series.

SERIES XXIII

Group A.

Obv. Head of Zeus; Rev. Apollo, $\Delta\Delta$.

Obv. Head of Zeus to r., laureate; border of dots.

Rev. Apollo standing l.; upper part of quiver visible above l. shoulder; in r. hand bow; plain border; in l. field $\Delta\Delta$; in r. field MAMEPTINQN .

422. Ryolo 6.06 gr.

423. Chiaramonte-Bordonaro (873) 5.15 gr.

Plate LII

Group B.

Obv. Head of Apollo; Rev. Apollo, ΔH .

Obv. Head of Apollo to r., laureate.

Rev. Apollo etc.; in l. field ΔH in r. field $\text{MAM} \dots$

424. Chiaramonte-Bordonaro (874) 3.98 gr.

425. Munich 5.11 gr.

426. Ryolo 5.96 gr.

Plate LII

Group C.

Obv. Head of Zeus; Rev. Warrior, ΔH .

Obv. Head of Zeus to r., laureate; plain border.

Rev. Warrior charging to r. etc.; plain border; in r. field ΔH ;
in l. field $\text{MAMEPTI} \dots$

- 427. Naples (Fiorelli, 4638) 2.95 gr.
- 428. Copenhagen (Ramus, 15) 3.82 gr.
- 429. Syracuse 2.7 gr.
- 430. London 3.19 gr.
- 431. Cambridge (McClellan Coll., Grose, 2451) 3.04 gr.
- 432. Cambridge (McClellan Coll., Grose, 2450, Pl. 82, 8) 2.98 gr.
- 433. Munich 2.36 gr.
- 434. Berlin (Imhoof-Blumer Coll.) 4.20 gr.
- 435. Syracuse 2.7 gr.
- 436. Naples (Fiorelli, 4639) 3.35 gr.
- 437. Berlin 2.49 gr.






Plate LIII





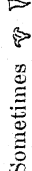




In Series XXIII are represented coins of two denominations: in Group A of an average weight of 5.61 gr. (2 specimens), in Group B of an average weight of 5.02 gr. (3 specimens) and in Group C of an average weight of 3.34 gr. (17 specimens).

The faces we meet on the obverse dies of Groups A and C are the same, grotesque in their ugliness, while the figure of Apollo on the reverse is the same in Groups A and B. The coins of Group C constitute a continuation of the coins of Series XXII, Group A, although the execution of the former is considerably inferior and shows evidence of a great decline. Thus Series XXIII should probably be placed not too far after the coins of the preceding series. The letters HΔ in Group A and ΔH in Groups B and C are to be regarded as value marks. These letters make it probable that the coins in Series XXIII were struck under the influence of the bronze coins minted in Sicily in 36—35 B. C. by Mark Anthony's naval prefects (cf. above p. 34 f.).

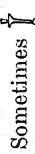

TABULAR SURVEY

PERIOD I, c. 288—278 B. C.



	Number Plate	Obverse	Reverse	Denomination	Weight
SERIES I					
Group A	1—8 Pl. I	Head of Ares 	Bull	Quadruple	18.20—13.26 gr. 16.24 gr. (23 spec.)
Group B	9—16 Pl. II	Head of Ares 	Eagle	Double	10.00—6.42 gr. 8.44 gr. (10 spec.)
SERIES II					
Group A	17—42 Pl. III—V	Head of Ares 	Eagle Sometimes Φ	Quadruple	21.26—13.76 gr. 16.78 gr. (51 spec.)
Group B	43—49 Pl. VI	Head of Zeus 	Bull	Double	8.62—6.43 gr. 7.64 gr. (11 spec.)
SERIES III					
Group A	50—61 Pl. VII—VIII	Head of Ares 	Eagle	Quadruple	19.10—15.90 gr. 17.43 gr. (25 spec.)

Group B	62-63 Pl. VII	Head of Ares	Bull		Unit	5.6-4.00 gr. 4.80 gr. (2 spec.)
SERIES IV						
Group A	64-76 Pl. IX-X	Head of Ares 	Eagle 		Quadruple	19.1-15.28 gr. 17.05 gr. (12 spec.)
Group B	77-89 Pl. XI-XII	Head of Ares Sometimes 	Bull		Double	9.95-7.25 gr. 8.32 gr. (16 spec.)
Group C	90-95 Pl. XII	Head of Ares Sometimes 	Bull Sometimes 		Unit	4.6-4.11 gr. 4.35 gr. (5 spec.)
SERIES V						
Group A	96-98 Pl. XIII	Head of Ares	Bull		Double	9.20-6.23 gr. 8.09 gr. (3 spec.)
Group B	99-104 Pl. XIII	Head of Ares 	Bull Sometimes 		Unit	5.64-4.45 gr. 5.09 gr. (8 spec.)
Group C	105-116 Pl. XIV	Head of Zeus	Eagle Sometimes 		Unit	5.03-2.90 gr. 4.10 gr. (16 spec.)

	Number Plate	Obverse	Reverse	Denomination	Weight
PERIOD II, c. 278—270 B. C.					
SERIES VI					
Group A	117—123 Pl. XV	Head of Ares Helmet	Nike	Quadruple	25.11—18.90 gr. 22.20 gr. (8 spec.)
Group B	124 Pl. XV	Head of Ares	Nike	Unit	6.93 gr. (1 spec.)
SERIES VII					
Group A	125—136 Pl. XVI—XVII	Head of Heracles Sometimes {	Eagle	Double	12.25—8.70 gr. 10.63 gr. (13 spec.)
SERIES VIII					
Group A	137—146 Pl. XVIII	Head of Adranus	Dog Sometimes ϕ	Unit	5.80—3.00 gr. 5.06 gr. (22 spec.)
PERIOD III, c. 270—220 B. C.					
SERIES IX					
Group A	147—149 Pl. XIX	Head of Ares ↑ C	Eagle	Double	10.18—8.94 gr. 9.74 gr. (3 spec.)




Group B	150—154 Pl. XIX.	Head of Ares Sometimes 	Bull Sometimes 	Unit	4.8—4.26 gr. 4.62 gr. (6 spec.)
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SERIES X




Group A	155—168 Pl. XX—XXI	Head of Ares	Athena	Double  	10.57—4.3 gr. 7.24 gr. (19 spec.)
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PERIOD IV, c. 220—200 B. C.









SERIES XI

Group A	169—208 Pl. XXII—XXVI	Head of Ares No symbol or 	Man leading horse 	Pentouktion 	14.11—9.20 gr. 11.40 gr. (80 spec.)
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




SERIES XII









Group A	209—216 Pl. XXVII	Head of Apollo 	Warrior standing front	Pentouktion 	13.50—9.13 gr. 11.24 gr. (25 spec.)
Group B	217—225 Pl. XXVIII	Head of Apollo 	Omphalos	Ounce	3.72—2.26 gr. 2.86 gr. (10 spec.)
Group C	226—231 Pl. XXVIII	Head of Apollo	Omphalos	Half ounce	1.40—1.11 gr. 1.26 gr. (6 spec.)

	Number Plate	Obverse	Reverse	Denomination	Weight
SERIES XIII					
Group A	232-243 Pl. XXIX-XXX	Head of Apollo 	Warrior standing l.	Pentonkion Π	12.65-6.69 gr. 10.07 gr. (32 spec.)
SERIES XIV					
Group A	244-254 Pl. XXX-XXXI	Head of Apollo 	Warrior seated	Pentonkion Π	14.77-6.68 gr. 10.58 gr. (29 spec.)
Group B	255-260 Pl. XXXII	Head of Apollo	Athena Α	Ounce	2.39-1.63 gr. 2.07 gr. (6 spec.)
Group C	261-264 Pl. XXXIII	Head of Heracles	Nike Α	Ounce	2.92-1.90 gr. 2.50 gr. (4 spec.)
Group D	265-268 Pl. XXXIV	Head of Artemis	Omphalos Α	Half ounce	1.42-0.85 gr. 1.23 gr. (5 spec.)
SERIES XV					
Group A	269-272 Pl. XXXIII	Head of Zeus 	Warrior Π	Pentonkion Π	13.25-10.22 gr. 11.62 gr. (5 spec.)



Group B	273—282 Pl. XXXIV	Head of Apollo 	Warrior 	Four ounces?	9.76—7.11 gr. 8.69 gr. (16 spec.)
Group C	283—290 Pl. XXXV	Head of Zeus 	Hermes	Three ounces?	6.70—5.17 gr. 6.02 gr. (11 spec.)
Group D	291—297 Pl. XXXVI	Head of Aphrodite 	Warrior 	Ounce	2.34—1.55 gr. 2.03 gr. (10 spec.)
Group E	298—300 Pl. XXXVI	Head of Ares 	Lyre Sometimes 	Ounce	2.82—2.67 gr. 2.78 gr. (4 spec.)
Group F	301—302 Pl. XXXVI	Head of Artemis 	Dog	Ounce	2.53—1.34 gr. 1.99 gr. (3 spec.)

SERIES XVI

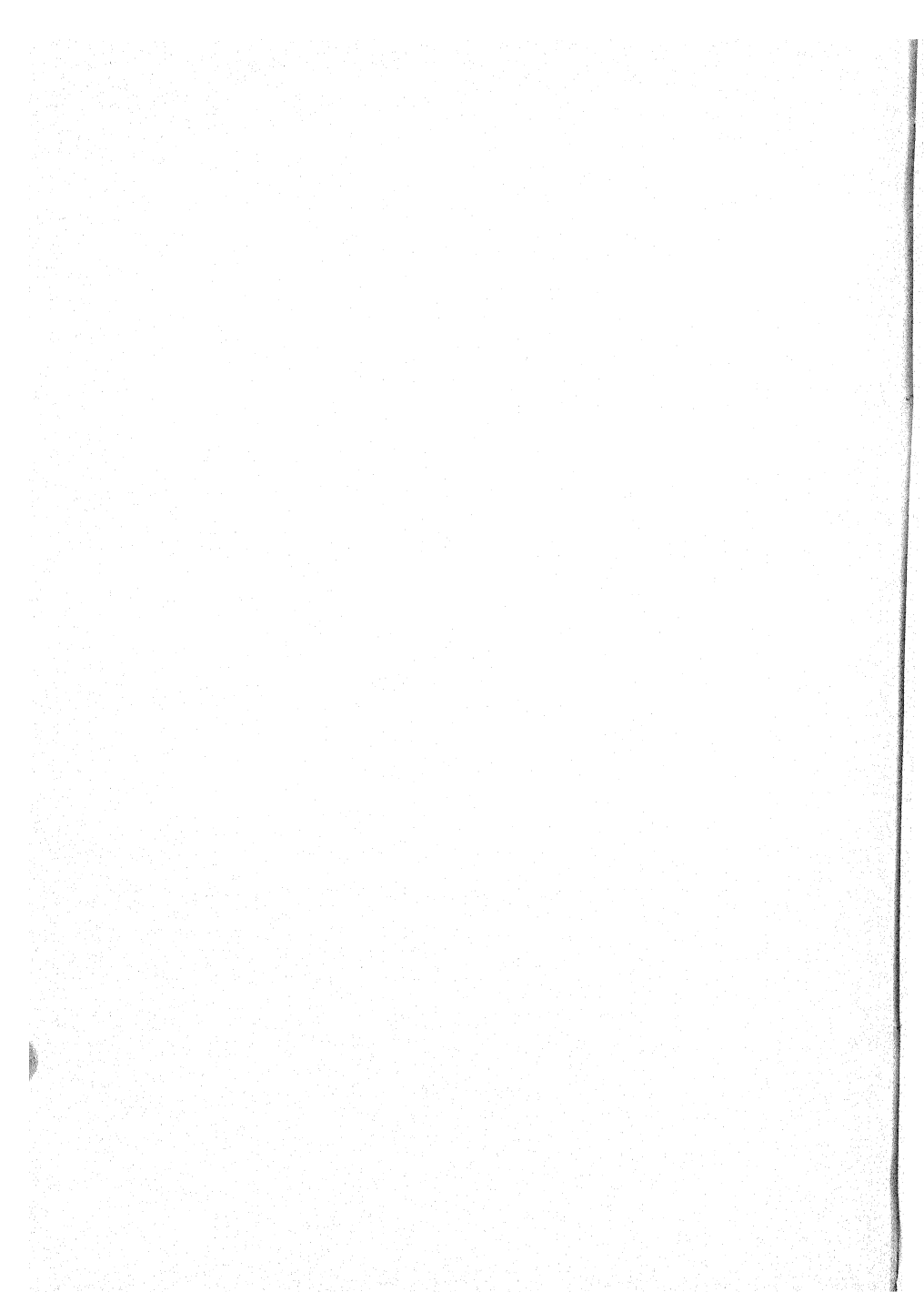
Group A	303—364 Pl. XXXVII—XLIII	Head of Zeus No symbol or 	Warrior 	Pentonkion 	15.47—7.31 gr. 10.91 gr. (124 spec.)
SERIES XVII					
Group A	365—370 Pl. XLIV	Head of Heraeas 	Artemis 	Two chalkoi XII	9.12—6.70 gr. 7.98 gr. (16 spec.)

	Number Plate	Obverse	Reverse	Denomination	Weight
PERIOD V, c. 200—35 B. C.					
SERIES XVIII					
Group A	371—376 Pl. XLV	Head of Zeus 	Warrior	Five ounces 	18.16—14.45 gr. 16.44 gr. (6 spec.)
Group B	377—381 Pl. XLVI	Head of Apollo 	Nike	Three ounces 	13.22—9.98 gr. 11.02 gr. (5 spec.)
SERIES XIX					
Group A	382—391 Pl. XLVII	Head of Apollo 	Nike	Three ounces 	8.65—6.26 gr. 7.03 gr. (25 spec.)
SERIES XX					
Group A	392—399 Pl. XLVIII	Head of Apollo 	Nike	Six ounces 	10.20—7.05 gr. 8.82 gr. (20 spec.)

SERIES XXI

Group A	400—404 Pl. XLIX	Head of Ares 	Female figure 	Four ounces ••• or ••••	6.70—4.80 gr. 5.73 gr. (5 spec.)
SERIES XXII					
Group A	405—418 Pl. L—LI	Head of Zeus	Warrior	Pentonktion Π	5.08—3.04 gr. 4.09 gr. (22 spec.)
Group B	419—421 Pl. LI	Head of Apollo	Artemis	Ounce? ?	2.05—1.8 gr. 1.90 gr. (3 spec.)
SERIES XXIII					
Group A	422—423 Pl. LII	Head of Zeus	Apollo	HA	6.06—5.15 gr. 5.61 gr. (2 spec.)
Group B	424—426 Pl. LII	Head of Apollo	Apollo	ΔH	5.96—3.98 gr. 5.02 gr. (3 spec.)
Group C	427—437 Pl. LIII	Head of Zeus	Warrior	ΔH	4.63—2.36 gr. 3.34 gr. (17 spec.)

TABLES OF WEIGHTS



SERIES I

Group A, Quadruple.

- 18.20 gr. Berlin (Löbbecke Coll.); *no. 2.*
18.09 » Cambridge (McClellan Coll., Grose, 2420, Pl. 81, 4).
17.28 » Chiaramonte-Bordonaro (795).
17.25 » Berlin; Gabrici, p. 93; *no. 3.*
17.17 » Munich.
17.14 » London (BMC Sicily, p. 110, 18); *no. 8.*
16.94 » Copenhagen (C. VIII. Münter, 1063 or 1064).
16.85 » Milan (Racc. Braidense).
16.77 » Florence (Migliarini, 1031).
16.70 » Naples (Coll. Santangelo, Fiorelli, 7904).
16.59 » Glasgow (Hunterian Coll., MacDonald, 11).
16.50 » Florence (Migliarini, 1032); *no. 4.*
16.40 » Munich.
16.00 » Berlin (Imhoof-Blumer Coll.); *no. 1.*
15.92 » Cambridge (McClellan Coll., Grose, 2421).
15.80 » Winterthur.
15.43 » Pennisi; *no. 7.*
15.18 » Naples (Coll. Santangelo, Fiorelli, 7903).
15.12 » Palermo (Gabrici, p. 93, p. 149, 13).
15.07 » Palermo (Gabrici, p. 93, p. 149, 12).
15.04 » Stockholm; *no. 5.*
14.89 » London (BMC Sicily, p. 110, 17); *no. 6.*
13.26 » Cambridge (Bunbury Coll., 371).

Plate 1

16.24 gr. (23 specimens).

Group B, Double.

- 10.00 gr. Florence (Migliarini, 1034); *no. 15.*
9.56 » Vienna; *no. 16.*

- 9.20 gr. Berlin (Imhoof-Blumer Coll.); Gabrici, p. 93; *no. 11.*
- 9.03 » London (BMC Sicily, p. 110, 12); *no. 9.*
- 8.90 » Pappalardo.
- 8.7 » Syracuse; *no. 13.*
- 8.65 » Winterthur; *no. 10.*
- 7.01 » Stockholm; *no. 14.*
- 6.95 » Berlin (Friedländer Coll.); Gabrici, p. 93; *no. 12.*
- 6.42 » Ryolo.

Plate II

8.44 gr. (10 specimens).

SERIES II

Group A, Quadruple.

- 21.26 gr. London (BMC Sicily, p. 109, 5); *no. 36.*
- 19.15 » Munich.
- 18.97 » Cambridge (McClellan Coll., Grose, 2418, Pl. 81, 2).
- 18.78 » Munich.
- 18.73 » Glasgow (Hunterian Coll., MacDonald, 4); *no. 40.*
- 18.56 » London (BMC Sicily, p. 109, 4); *no. 32.*
- 18.54 » Munich.
- 18.48 » Berlin.
- 18.32 » Florence (Migliarini, 1033).
- 18.1 » Syracuse; *no. 26.*
- 18.10 » Naples (Fiorelli, 4607); *no. 21.*
- 17.96 » Cambridge (McClellan Coll., Grose, 2416, Pl. 81, 1);
no. 30.
- 17.87 » Berlin (Löbbecke Coll.); *no. 42.*
- 17.86 » Cambridge (Leake, Isl., p. 64, 5).
- 17.78 » London (BMC Sicily, p. 109, 3); *no. 22.*
- 17.77 » Berlin (Fox Coll.); *no. 18.*
- 17.74 » Cambridge (General Coll.).
- 17.55 » Milan (Racc. Braidense).
- 17.48 » Copenhagen (V. Freund 1882); *no. 33.*
- 17.45 » Palermo (Gabrici, p. 93, p. 149, 10).
- 17.37 » Cambridge (Bunbury Coll., 372); *no. 19.*

- 17.3 gr. Syracuse; *no.* 27.
- 17.3 » Syracuse; *no.* 38.
- 17.24 » Pennisi; *no.* 25.
- 17.24 » Glasgow (Hunterian Coll., MacDonald, 3); *no.* 17.
- 16.93 » Copenhagen (Ramus, 24).
- 16.86 » London (BMC Sicily, p. 109, 7); *no.* 39.
- 16.75 » Paris (Coll. de Luynes, Babelon, 1027).
- 16.48 » Vienna.
- 16.44 » Vienna; *no.* 20.
- 16.30 » Copenhagen (C. VIII. Falbe, Nauplia-Athens 1834—35).
- 16.00 » London (BMC Sicily, p. 109, 6); *no.* 35.
- 15.81 » Vienna.
- 15.81 » Vienna.
- 15.8 » Syracuse; *no.* 24.
- 15.75 » Cambridge (Bunbury Coll., 371).
- 15.70 » Naples (Coll. Santangelo, Fiorelli, 7894).
- 15.68 » Stockholm; *no.* 31.
- 15.53 » Vienna.
- 15.44 » Copenhagen (Ramus, 25).
- 15.40 » Naples (Coll. Santangelo, Fiorelli, 7897); *no.* 29.
- 15.40 » Berlin (v. Gansauge Coll.); *no.* 28.
- 15.25 » Naples (Coll. Santangelo, Fiorelli, 7890).
- 15.07 » Vienna; *no.* 23.
- 14.85 » Naples (Coll. Santangelo, Fiorelli, 7896).
- 14.80 » Berlin (Imhoof-Blumer Coll.); *no.* 37.
- 14.55 » Milan (Racc. Braidense).
- 14.37 » Palermo (Gabrici, p. 149, 11, Pl. V, 28).
- 14.25 » Berlin (Löbbecke Coll.); *no.* 34.
- 13.94 » Munich.
- 13.76 » London; *no.* 41.

Plates III—V

16.78 gr. (51 specimens).

Group B, Double.

- 8.62 gr. Pennisi; *no.* 47.
- 8.60 » Berlin (Imhoof-Blumer Coll., Imhoof-Blumer, Berl. Bl., V, p. 51, 2); Gabrici, p. 94; *no.* 45.

- 8.40 gr. Berlin (Fox Coll.); *no.* 43.
 8.25 » Winterthur.
 7.70 » Naples (Fiorelli, 4635); *no.* 48.
 7.60 » Milan; *no.* 49.
 7.37 » Copenhagen (C. VIII. Falbe 1842—46).
 7.30 » Cambridge (Bunbury Coll., 372).
 6.93 » Berlin (Löbbecke Coll.); *no.* 44.
 6.88 » London; *no.* 46.
 6.43 » Vienna.

Plate VI

7.64 gr. (11 specimens).

SERIES III

Group A, Quadruple.

- 19.10 gr. Palermo (Gabrici, p. 93, p. 148, 6).
 18.91 » Pennisi; *no.* 52.
 18.62 » Berlin (Löbbecke Coll.); *no.* 50.
 18.50 » Naples (Fiorelli, 4609); *no.* 53.
 18.40 » Berlin; *no.* 59.
 18.02 » Copenhagen (C. VIII); *no.* 58.
 17.95 » Naples (Coll. Santangelo, Fiorelli, 7891).
 17.83 » Cambridge (McClean Coll., Grose, 2419, Pl. 81, 3).
 17.66 » Vienna.
 17.52 » Munich.
 17.50 » Naples (Fiorelli, 4608); *no.* 55.
 17.45 » Naples (Coll. Santangelo, Fiorelli, 7893).
 17.31 » Munich; *no.* 60.
 17.24 » Palermo (Gabrici, p. 149, 9).
 17.20 » Palermo (Gabrici, p. 149, 8).
 17.17 » Glasgow (Hunterian Coll., MacDonald, 5); *no.* 51.
 17.01 » Ryolo; *no.* 54.
 17.00 » London (BMC Sicily, p. 109, 8); *no.* 61.
 16.95 » Palermo (Gabrici, p. 149, 7).
 16.95 » Berlin (Löbbecke Coll.); *no.* 56.

- 16.92 gr. Paris (Coll. de Luynes, Babelon, 1028).
 16.50 » Chiaramonte-Bordonaro (462).
 16.30 » Cambridge (McClean Coll., Grose, 2417).
 15.95 » Winterthur; *no.* 57.
 15.90 » Milan.

Plates VII—VIII

17.43 gr. (25 specimens).

Group B, Unit.

- 5.6 gr. Syracuse; *no.* 63.
 4.00 » Berlin; *no.* 62.

Plate VII

4.80 gr. (2 specimens).

SERIES IV

Group A, Quadruple.

- 19.1 gr. Syracuse; *no.* 64.
 18.28 » Ryolo; *no.* 73.
 18.18 » Ryolo; *no.* 70.
 17.83 » Vienna; *no.* 74.
 17.30 » Glasgow (Hunterian Coll., MacDonald, 7); *no.* 65.
 17.09 » London (BMC Sicily, p. 109, 10); *no.* 68.
 16.80 » Copenhagen (Pontoppidan 1907); *no.* 72.
 16.47 » Munich; *no.* 75.
 16.35 » Naples (Fiorelli, 4610); *no.* 67.
 16.00 » London (BMC Sicily, p. 110, 11); *no.* 69.
 15.86 » Berlin (v. Gansauge Coll.); *no.* 71.
 15.28 » Cambridge (Gutteridge Gift); *no.* 66.
 Reggio di Calabria; *no.* 76.

Plates IX—X

17.05 gr. (12 specimens).

Group B, Double.

- 9.95 gr. Glasgow (Hunterian Coll., MacDonald, 14); *no.* 78.
 9.67 » Cambridge (Bunbury Coll., 372); *no.* 80.

- 9.51 gr. Vienna; *no.* 88.
 9.29 » Vienna; *no.* 86.
 8.49 » Cambridge (McClellan Coll., Grose, 2422, Pl. 81, 5);
no. 89.
 8.31 » London (BMC Sicily, p. 110, 19); *no.* 81.
 8.22 » Cambridge (Leake, Isl., p. 64, 10); *no.* 84.
 8.11 » Munich; *no.* 87.
 8.07 » Copenhagen (Ramus, 29).
 7.95 » Cambridge (Leake, Isl., p. 64, 9).
 7.84 » Glasgow (Hunterian Coll., MacDonald, 12); *no.* 85.
 7.81 » Berlin (Peytrignet Coll.); *no.* 77.
 7.72 » Munich.
 7.65 » Cambridge (McClellan Coll., Grose, 2423); *no.* 83.
 7.29 » Glasgow (Hunterian Coll., MacDonald, 13); *no.* 82.
 7.25 » Naples (Fiorelli, 4636); *no.* 79.

Plates XI—XII

8.32 gr. (16 specimens).

Group C, Unit.

- 4.6 gr. Syracuse; *no.* 94.
 4.45 » Copenhagen (C. VIII. Falbe, Paris 1833); *no.* 95.
 4.41 » Cambridge (McClellan Coll., Grose, 2424, Pl. 81, 6);
no. 90.
 4.17 » Cambridge (Leake, Isl., p. 64, 11); *no.* 93.
 4.11 » London (BMC Sicily, p. 110, 21); *no.* 92.
 From casts in Winterthur. The original? *no.* 91.

Plate XII

4.35 gr. (5 specimens).

SERIES V

Group A, Double.

- 9.20 gr. Naples (Coll. Santangelo, Fiorelli, 7906); *no.* 97.
 8.85 » Copenhagen (C. VIII. Falbe, Nauplia-Athens 1834—35);
no. 96.
 6.23 » London (BMC Sicily, p. 110, 20); *no.* 98.

Plate XIII

8.09 gr. (3 specimens).

Group B, Unit.

- 5.64 gr. Ryolo; *no. 103.*
 5.50 » Naples (Coll. Santangelo, Fiorelli, 7907); *no. 102.*
 5.45 » Cambridge (McClean Coll., Grose, 2425, Pl. 81, 7);
no. 101.
 5.20 » Berlin (Imhoof-Blumer Coll.); *no. 100.*
 4.93 » Munich; *no. 104.*
 4.82 » Palermo (Gabrici, p. 149, 17).
 4.74 » Palermo (Gabrici, p. 149, 18).
 4.45 » Berlin (Imhoof-Blumer Coll.); *no. 99.*
- Plate XIII* 5.09 gr. (8 specimens).

Group C, Unit.

- 5.03 gr. Copenhagen (V. Freund 1882); *no. 108.*
 5.02 » London (BMC Sicily, p. 110, 16); *no. 111.*
 4.88 » Cambridge (Leake, Isl., p. 64, 13); *no. 114.*
 4.75 » Pennisi; *no. 105.*
 4.65 » London (BMC Sicily, p. 110, 14); *no. 113.*
 4.40 » Berlin.
 4.24 » Glasgow (Hunterian Coll., MacDonald, 10, Pl. XV, 1);
no. 115.
 4.1 » Syracuse; *no. 109.*
 4.08 » Catania (De Agostino, ASSO Ser. 2 XI, p. 145, 71).
 4.00 » Berlin; *no. 112.*
 3.87 » London (BMC Sicily, p. 110, 15); *no. 106.*
 3.77 » Palermo (Gabrici, p. 151, 61).
 3.6 » Syracuse; *no. 107.*
 3.33 » Catania (De Agostino, ASSO Ser. 2 XI, p. 145, 70).
 2.95 » Berlin; *no. 110.*
 2.90 » Copenhagen (Ramus, 27); *no. 116.*
- Plate XIV* 4.10 gr. (16 specimens).

SERIES VI

Group A, Quadruple.

- 25.11 gr. Copenhagen (V. Freund 1882); *no. 122.*

- 25.02 gr. Cambridge (McClean Coll., Grose, 2415, Pl. 80, 14);
no. 119.
- 23.00 » Winterthur; *no. 117.*
- 22.61 » Palermo (Gabrici, p. 87, p. 148, 1).
- 21.35 » Berlin (Fox Coll.); *no. 121.*
- 21.28 » Munich; *no. 118.*
- 20.35 » Chiaramonte-Bordonaro (1245); *no. 120.*
- 18.90 » Berlin (Imhoof-Blumer Coll.); Gabrici, p. 87; *no. 123.*
- Plate XV 22.20 gr. (8 specimens).

Group B, Unit.

- 6.93 gr. Six; Holm III, p. 736, 453 a; Phot. from casts in Winterthur; *no. 124.*

Plate XV

SERIES VII

Group A, Double.

- 12.25 gr. Venice (Museo Correr, Catalogo, 30); *no. 131.*
- 11.40 » Berlin (Imhoof-Blumer Coll.); *no. 127.*
- 11.35 » Pennisi; *no. 135.*
- 11.18 » London (BMC Sicily, p. 110, 13); *no. 128.*
- 11.16 » Cambridge (Hay Coll., 245); *no. 125.*
- 11.05 » Berlin (Imhoof-Blumer Coll.); Gabrici, p. 93; *no. 136.*
- 10.62 » Munich; *no. 130.*
- 10.53 » Glasgow (Hunterian Coll., MacDonald, 8); *no. 129.*
- 10.09 » Palermo (Gabrici, p. 93, p. 149, 14).
- 9.90 » Berlin (Fox Coll.); Gabrici, p. 93; *no. 126.*
- 9.15 » Naples (Coll. Santangelo, Fiorelli, 7901); *no. 133.*
- 8.70 » Cambridge (McClean Coll., Grose, 2426, Pl. 81, 8);
no. 134.

Plates XVI—XVII

10.63 gr. (13 specimens).

SERIES VIII

Group A, Unit.

- 5.80 gr. Naples (Fiorelli, 4644); *no. 141.*
 5.77 » Glasgow (Hunterian Coll., MacDonald, 2).
 5.74 » London (BMC Sicily, p. 109, 2).
 5.62 » London (BMC Sicily, p. 109, 1).
 5.60 » Palermo (Gabrici, p. 94, p. 149, 16).
 5.55 » Berlin (Fox Coll.); *no. 139.*
 5.54 » Vienna; *no. 142.*
 5.5 » Syracuse; *no. 138.*
 5.45 » Naples (Fiorelli, 4645).
 5.43 » Copenhagen (C. VIII. Falbe, la Haye-Paris 1830);
no. 140.
 5.38 » Glasgow (Hunterian Coll., MacDonald, 1); *no. 146.*
 5.33 » Berlin (Imhoof-Blumer Coll.); *no. 145.*
 5.30 » Naples (Fiorelli, 4646).
 5.29 » Chiaramonte-Bordonaro; *no. 144.*
 5.13 » Cambridge (Hay Coll., 245).
 4.81 » Pennisi; *no. 137.*
 4.52 » Berlin (Fox Coll.).
 4.37 » Palermo (Gabrici, p. 94, p. 149, 15).
 4.25 » Berlin (Löbbecke Coll.).
 4.10 » Winterthur.
 3.90 » Munich; *no. 143.*
 3.00 » Vienna.

Plate XVIII

5.06 gr. (22 specimens).

SERIES IX

Group A, Double.

- 10.18 gr. Chiaramonte-Bordonaro (617); *no. 148.*
 10.1 » Syracuse (Orsi, AMIN IV, p. 32, fig. 32); *no. 147.*
 8.94 » Copenhagen (Ramus, 26); *no. 149.*

Plate XIX

9.74 gr. (3 specimens).

Group B, Unit.

- 4.8 gr. Syracuse; *no. 150.*
 4.8 » Syracuse; *no. 151.*
 4.75 » Cambridge (Bunbury Coll., 372); *no. 152.*
 4.50 » Berlin (Imhoof-Blumer Coll.); Gabrici, p. 94; *no. 153.*
 4.26 » Berlin (Imhoof-Blumer Coll., Imhoof-Blumer, Berl. Bl., V, p. 51, 3); Gabrici, p. 94; *no. 154.*

Plate XIX

4.62 gr. (5 specimens).

SERIES X

Group A, Double.

- 10.57 gr. Cambridge (McClean Coll., Grose, 2432, Pl. 81, 13); *no. 155.*
 9.14 » Glasgow (Hunterian Coll., MacDonald, 17); *no. 156.*
 8.31 » Berlin; Gabrici, p. 88; *no. 162.*
 8.21 » Munich.
 8.17 » Catania (De Agostino, ASSO Ser. 2 XI, p. 143, 1, Pl. I, 12).
 7.87 » Berlin; *no. 166.*
 7.80 » Palermo (Gabrici, p. 148, 5).
 7.80 » Berlin (Imhoof-Blumer Coll.); Gabrici, p. 88; *no. 161.*
 7.68 » Pennisi; *no. 157.*
 7.6 » Syracuse; *no. 160.*
 7.58 » London (BMC Sicily, p. 111, 24); *no. 159.*
 7.35 » Cambridge (General Coll.).
 6.87 » Munich.
 6.80 » Berlin; Gabrici, p. 88; *no. 163.*
 6.29 » Glasgow (Hunterian Coll., MacDonald, 18); *no. 158.*
 5.70 » Copenhagen (C. VIII. Münter, 1075); *no. 164.*
 5.02 » Copenhagen (Ramus, 17); *no. 167.*
 4.50 » Berlin (Imhoof-Blumer Coll.); *no. 168.*
 4.3 » Syracuse; *no. 165.*

Plates XX—XXI

7.24 gr. (19 specimens).

SERIES XI

Group A, Pentonkion.

- 14.11 gr. Berlin (Löbbecke Coll.); *no. 190.*
- 13.50 » Vienna; *no. 197.*
- 13.40 » Palermo (Gabrici, p. 150, 46, Pl. VII, 30).
- 13.30 » Palermo (Gabrici, p. 150, 42).
- 12.94 » Berlin (Peytrignet Coll.); *no. 204.*
- 12.80 » Venice (Museo Correr, Catalogo, 29).
- 12.73 » Palermo (Gabrici, p. 150, 47).
- 12.7 » Syracuse.
- 12.52 » Berlin (Fox Coll.); *no. 191.*
- 12.51 » Cambridge (McClellan Coll., Grose, 2441, Pl. 82, 2);
no. 202 β.
- 12.47 » Munich; *no. 200 β.*
- 12.38 » London (BMC Sicily, p. 112, 35); *no. 188.*
- 12.35 » Berlin (Löbbecke Coll.); *no. 185.*
- 12.27 » Berlin (Imhoof-Blumer Coll.); *no. 206.*
- 12.2 » Syracuse; *no. 179.*
- 12.15 » Palermo (Gabrici, p. 150, 43).
- 12.12 » Berlin; found in Domatia at Priene; *no. 169.*
- 12.10 » Palermo (Gabrici, p. 150, 48).
- 12.08 » Berlin (Imhoof-Blumer Coll.); *no. 170.*
- 12.06 » Vienna; *no. 173.*
- 12.05 » Cambridge (Bunbury Coll., 372); *no. 182.*
- 11.99 » Glasgow (Hunterian Coll., MacDonald, 24); *no. 180.*
- 11.95 » Palermo (Gabrici, p. 150, 44).
- 11.90 » Paris (Coll. de Luynes, Babelon, 1032).
- 11.80 » Vienna; *no. 195.*
- 11.75 » Munich; *no. 186 β.*
- 11.74 » Stockholm; *no. 201 α.*
- 11.73 » London (BMC Sicily, p. 112, 34); *no. 205.*
- 11.72 » Cambridge (Weber Gift); *no. 189.*
- 11.65 » Palermo (Gabrici, p. 150, 50).
- 11.63 » Ryolo.
- 11.60 » Naples (Fiorelli, 4613); *no. 207.*

- 11.60 gr. Glasgow (Hunterian Coll., MacDonald, 25, Pl. XV, 2);
no. 187 a.
- 11.55 » Cambridge (Leake, Isl., p. 64, 2); *no. 183.*
- 11.53 » Berlin (Imhoof-Blumer Coll.); *no. 193.*
- 11.50 » Naples (Fiorelli, 4615); *no. 187 β.*
- 11.48 » Vienna.
- 11.45 » Munich; *no. 174 β.*
- 11.31 » Munich.
- 11.31 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 46).
- 11.30 » Naples (Fiorelli, 4614); *no. 201 β.*
- 11.3 » Syracuse.
- 11.27 » Berlin; *no. 208.*
- 11.22 » Naples (Fiorelli, 4612); *no. 175.*
- 11.22 » Munich; *no. 174 a.*
- 11.21 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 54).
- 11.16 » Cambridge (McClean Coll., Grose, 2440).
- 11.14 » Copenhagen (C. VIII); *no. 194 a.*
- 11.08 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 61).
- 11.07 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 58).
- 11.05 » Florence (Migliarini, 1027).
- 11.03 » Pennisi; *no. 196.*
- 11.02 » Glasgow (Hunterian Coll., MacDonald, 26); *no. 202 a.*
- 11.00 » Winterthur.
- 11.0 » Syracuse; *no. 186 a.*
- 10.95 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 49).
- 10.90 » Copenhagen (Ramus, 20); *no. 200 a.*
- 10.88 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 43).
- 10.85 » Berlin (v. Gansauge Coll.); *no. 177.*
- 10.85 » Milan (Racc. Braidense); *no. 198.*
- 10.75 » Vienna; *no. 203.*
- 10.69 » London (BMC Sicily, p. 112, 32); *no. 176.*
- 10.65 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 52).
- 10.62 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 57).
- 10.53 » Palermo (Gabrici, p. 150, 45, Pl. VII, 28).
- 10.51 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 50).
- 10.48 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 56).

- 10.37 gr. Palermo (Gabrici, p. 150, 49).
 10.34 » Munich; *no. 184* β .
 10.32 » Berlin (Fox Coll.); *no. 181*.
 10.32 » Berlin (v. Rauch Coll.); *no. 199*.
 10.29 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 53).
 10.16 » Copenhagen (C. VIII. Falbe 1841).
 10.12 » Munich; *no. 201* γ .
 10.08 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 48).
 10.05 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 59).
 9.85 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 47).
 9.59 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 51).
 9.52 » Florence (Migliarini, 1026).
 9.20 » London (BMC Sicily, p. 112, 33); *no. 192*.
 London; *no. 194* β .
 Reggio di Calabria; *no. 171*.
 Reggio di Calabria; *no. 196* β .
 Reggio di Calabria; *no. 184* α .

Plates XXII—XXVI

11.40 gr. (80 specimens).

SERIES XII

Group A, Pentonkion.

- 13.50 gr. Palermo (Gabrici, p. 150, 37).
 13.26 » Munich; *no. 215* β .
 13.20 » Berlin (Imhoof-Blumer Coll.); *no. 209*.
 12.83 » Palermo (Gabrici, p. 150, 38).
 12.82 » Vienna; *no. 214*.
 12.5 » Syracuse; *no. 213* α .
 12.36 » Cambridge (McClellan Coll., Grose, 2443, Pl. 82, 3);
 no. 213 γ .
 11.96 » Munich.
 11.74 » Cambridge (McClellan Coll., Grose, 2444).
 11.23 » Vienna.
 11.15 » Berlin (v. Gansauge Coll.); *no. 211*.
 11.05 » Florence (Migliarini, 1029).

- 11.03 gr. Berlin (Löbbecke Coll.); *no.* 210.
 10.82 » Glasgow (Hunterian Coll., MacDonald, 27).
 10.82 » London (BMC Sicily, p. 112, 36); *no.* 216 *a.*
 10.75 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 38).
 10.61 » Vienna; *no.* 212 *a.*
 10.39 » Vienna.
 10.30 » Palermo (Gabrici, p. 150, 36, Pl. VII, 26).
 10.10 » Copenhagen (Ramus, 8); *no.* 213 β .
 10.07 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 40).
 9.87 » Naples (Fiorelli, 4619); *no.* 215 *a.*
 9.80 » Naples (Fiorelli, 4618); *no.* 212 β .
 9.60 » Vienna; *no.* 213 δ .
 9.13 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 39).
 London; *no.* 216 β .

Plate XXVII

11.24 gr. (25 specimens).

Group B, Ounce.

- 3.72 gr. Vienna; Eckhel, Sylloge, Pl. II, 11, Doctrina, I, 1, p. 224 f.;
 cf. Friedländer, Die oskischen Münzen, p. 60; *no.* 217.
 3.63 » Glasgow (Hunterian Coll., MacDonald, 16); Eckhel, Doctrina, I, 1, p. 224; *no.* 220.
 2.98 » Naples (Fiorelli, 4642); *no.* 221.
 2.92 » Chiaramonte-Bordonaro (869).
 2.73 » Cambridge (Bunbury Coll., 372); *no.* 223.
 2.72 » Berlin; *no.* 224.
 2.57 » Berlin (Imhoof-Blumer Coll.); *no.* 222.
 2.57 » Copenhagen (Ramus, 31); *no.* 218.
 2.53 » Berlin (Imhoof-Blumer Coll.); *no.* 225.
 2.26 » Cambridge (McClellan Coll., Grose, 2430, Pl. 81, 11);
no. 219.

Plate XXVIII

2.86 gr. (10 specimens).

Group C, Half ounce.

- 1.40 gr. Copenhagen (Ramus, 32); *no.* 228.
 1.31 » Munich; *no.* 231.

- 1.30 gr. Berlin; *no.* 230.
 1.3 » Syracuse; *no.* 229.
 1.14 » London (BMC Sicily, p. 113, 50); *no.* 226.
 1.11 » Pappalardo; *no.* 227.

Plate XXVIII

1.26 gr. (6 specimens).

SERIES XIII

Group A, Pentonkion.

- 12.65 gr. Copenhagen (Ramus, 9); *no.* 237.
 11.93 » Munich.
 11.79 » Glasgow (Hunterian Coll., MacDonald, 28); *no.* 239.
 11.66 » Berlin (Löbbecke Coll.).
 11.41 » Naples (Fiorelli, 4616); *no.* 233.
 11.38 » Berlin (Imhoof-Blumer Coll.); *no.* 241.
 11.31 » Naples (Fiorelli, 4617).
 11.12 » Cambridge (Leake, Isl., p. 64, 3).
 11.10 » Florence (Migliarini, 1028); *no.* 234 *a.*
 11.00 » Vienna; *no.* 238 *a.*
 11.00 » Vienna; *no.* 234 *β.*
 10.89 » London (BMC Sicily, p. 112, 37); *no.* 235.
 10.65 » Cambridge (Bunbury Coll., 372).
 10.57 » Cambridge (General Coll.).
 10.50 » Palermo (Gabrici, p. 150, 34, Pl. VII, 24).
 10.43 » London (BMC Sicily, p. 112, 38); *no.* 236 *a.*
 10.38 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 33).
 10.10 » Vienna.
 9.75 » Palermo (Gabrici, p. 150, 35).
 9.56 » Berlin (v. Rauch Coll.); *no.* 232.
 9.49 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 36).
 9.49 » Munich.
 9.13 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 32).
 9.01 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 35).
 9.0 » Syracuse; *no.* 238 *β.*

- 8.85 gr. Copenhagen (Ramus, 10).
 8.63 » Munich; *no.* 243.
 8.42 » Berlin (Friedländer Coll.); *no.* 242.
 8.28 » Cambridge (McClean Coll., Grose, 2445, Pl. 82, 4);
no. 236 β .
 8.10 » Glasgow (Hunterian Coll., MacDonald, 29); *no.* 240.
 8.09 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 37).
 6.69 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 34).
Plates XXIX—XXX. 10.07 gr. (32 specimens).

SERIES XIV

Group A, Pentonkion.

- 14.77 gr. London (BMC Sicily, p. 112, 39); *no.* 245.
 13.3 » Syracuse; *no.* 246.
 12.17 » Palermo (Gabrici, p. 150, 40).
 12.03 » Berlin (v. Gansauge Coll.); *no.* 251.
 11.79 » Stockholm; *no.* 253 *a*.
 11.69 » Cambridge (Leake, Isl., p. 64, 4).
 11.66 » London (BMC Sicily, p. 112, 40); *no.* 244.
 11.65 » Winterthur; *no.* 248 β .
 11.37 » Munich; *no.* 247 β .
 11.31 » Palermo (Gabrici, p. 150, 39).
 11.18 » Cambridge (De Pass Gift).
 11.16 » Cambridge (McClean Coll., Grose, 2446, Pl. 82, 5).
 10.95 » Vienna.
 10.50 » Glasgow (Hunterian Coll., MacDonald, 30); *no.* 252.
 10.45 » Naples (Fiorelli, 4621); *no.* 248 *a*.
 10.32 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 42).
 10.25 » Naples (Fiorelli, 4622).
 10.04 » Copenhagen (Ramus, 21); *no.* 249.
 10.03 » Munich; *no.* 253 β .
 9.65 » Naples (Fiorelli, 4620).
 9.63 » Palermo (Gabrici, p. 150, 41, Pl. VII, 29).
 9.60 » Munich.

- 9.49 gr. Berlin (Imhoof-Blumer Coll.); *no. 250 β* .
 9.45 » Berlin (Imhoof-Blumer Coll.); *no. 250 a*.
 9.42 » Vienna.
 9.22 » Cambridge (Bunbury Coll., 372).
 8.80 » Vienna; *no. 247 a*.
 8.15 » Berlin (Friedländer Coll.); *no. 254*.
 6.68 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 41).

Plates XXX—XXXI

10.58 gr. (29 specimens).

Group B, Ounce.

- 2.39 gr. Cambridge (Leake, Isl., p. 64, 12); *no. 260*.
 2.37 » Munich; *no. 258*.
 2.08 » Pennisi (Salinas, La collezione num. Pennisi, Pl. IX, 22);
no. 255.
 2.05 » Ryolo; *no. 256*.
 1.87 » Naples (Fiorelli, 4640); *no. 259*.
 1.63 » Naples (Fiorelli, 4641); *no. 257*.

Plate XXXII

2.07 gr. (6 specimens).

Group C, Ounce.

- 2.92 gr. London (BMC Sicily, p. 113, 46); *no. 262*.
 2.62 » Berlin (Imhoof-Blumer Coll., Imhoof-Blumer, Berl. Bl., V,
 p. 51, 4); *no. 264*.
 2.55 » Berlin; *no. 261*.
 1.90 » Copenhagen (C. VIII. Rollin); *no. 263*.

Plate XXXII

2.50 gr. (4 specimens).

Group D, Half ounce.

- 1.42 gr. Berlin; *no. 268*.
 1.42 » Cambridge (McClellan Coll., Grose, 2431, Pl. 81, 12);
no. 265.
 1.30 » Paris (Coll. de Luynes, Babelon, 1034).
 1.14 » London (BMC Sicily, p. 113, 51); *no. 267*.
 0.85 » Naples (Fiorelli, 4643); *no. 266*.

Plate XXXII

1.23 gr. (5 specimens).

SERIES XV

Group A, Pentonkion.

- 13.25 gr. Vienna; *no.* 269.
 12.12 » London (BMC Sicily, p. 111, 29); *no.* 271.
 11.40 » Florence (Migliarini, 1024); *no.* 270.
 11.10 » Palermo (Gabrici, p. 150, 29, Pl. VII, 25).
 10.22 » Berlin (Löbbecke Coll.); *no.* 272.

Plate XXXIII

11.62 gr. (5 specimens).

Group B, Four ounces?

- 9.76 gr. Palermo (Gabrici, p. 148, 3).
 9.65 » Copenhagen (Ramus, 14).
 9.55 » Cambridge (Bunbury Coll., 372); *no.* 282.
 9.47 » Chiaramonte-Bordonaro (878).
 9.46 » Cambridge (McClellan Coll., Grose, 2427, Pl. 81, 9);
no. 281.
 9.34 » Cambridge (McClellan Coll., Grose, 2428).
 8.80 » Berlin (Imhoof-Blumer Coll.); *no.* 273.
 8.7 » Syracuse; *no.* 279.
 8.65 » Paris (Coll. de Luynes, Babelon, 1033).
 8.62 » Glasgow (Hunterian Coll., MacDonald, 15).
 8.55 » Palermo (Gabrici, p. 148, 4).
 7.92 » Munich; *no.* 280.
 7.90 » Berlin (Imhoof-Blumer Coll.); *no.* 275.
 7.80 » Florence (Migliarini, 1035); *no.* 278.
 7.74 » Berlin (Löbbecke Coll.); *no.* 274.
 7.11 » London (BMC Sicily, p. 110, 22); *no.* 276.
 London (BMC Sicily, p. 110, 23); *no.* 277.

Plate XXXIV

8.69 gr. (16 specimens).

Group C, Three ounces?

- 6.70 gr. Palermo (Gabrici, p. 151, 59).
 6.65 » Copenhagen (C. VIII. Falbe, Paris 1833).

- 6.50 gr. London (BMC Sicily, p. 113, 47); Mirone, Rev. num.
1920, p. 32, Pl. II, 28; *no.* 283.
6.24 » Berlin (Löbbecke Coll.); *no.* 289.
6.24 » Pennisi; *no.* 285.
6.1 » Syracuse; *no.* 287 β .
5.84 » Berlin; *no.* 288.
5.77 » London (BMC Sicily, p. 113, 48); *no.* 286.
5.7 » Syracuse (Orsi, AMIIN IV, p. 32, fig. 33); *no.* 287 *a.*
5.27 » Berlin (Imhoof-Blumer Coll.); *no.* 284.
5.17 » Berlin (Imhoof-Blumer Coll.); *no.* 290.

Plate XXXV

6.02 gr. (11 specimens).

Group D, Ounce.

- 2.34 gr. Chiaramonte-Bordonaro (1315).
2.33 » London (BMC Sicily, p. 113, 49); *no.* 295.
2.25 » Palermo (Gabrici, p. 149, 20, Pl. V, 26).
2.19 » Berlin; *no.* 297.
2.10 » Berlin; *no.* 292.
2.08 » Berlin (Löbbecke Coll.); *no.* 291.
2.05 » Berlin (Imhoof-Blumer Coll., Imhoof-Blumer, Berl. Bl., V.
p. 52, 6); *no.* 296.
1.78 » Cambridge (Bunbury Coll., 372); *no.* 294.
1.62 » Chiaramonte-Bordonaro (1314).
1.55 » Cambridge (McClean Coll., Grose, 2429, Pl. 81, 10);
no. 293.

Plate XXXVI

2.03 gr. (10 specimens).

Group E, Ounce.

- 2.82 gr. Berlin (Löbbecke Coll.); *no.* 298.
2.82 » Berlin (Peytrignet Coll.); *no.* 300.
2.79 » Palermo (Gabrici, p. 94, p. 149, 19, Pl. V, 27).
2.67 » Berlin; *no.* 299.

Plate XXXVII

2.78 gr. (4 specimens).

Group F, Ounce.

2.53 gr. Chiaramonte-Bordonaro; *no. 302.*

2.10 » Pappalardo; *no. 301.*

1.34 » Palermo (Gabrici, p. 149, 21).

Plate XXXVI

1.99 gr. (3 specimens).

SERIES XVI

Group A, Pentonkion.

15.47 gr. Vienna; *no. 353.*

14.19 » Glasgow (Hunterian Coll., MacDonald, 23); *no. 359.*

14.00 » Berlin (Fox Coll.); *no. 311.*

13.66 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 29).

13.40 » Palermo (Gabrici, p. 150, 28).

13.17 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 23).

13.01 » Munich; *no. 357 a.*

13.01 » Cambridge (Bunbury Coll., 372); *no. 322.*

12.93 » Berlin; *no. 352.*

12.90 » Naples (Fiorelli, 4626); *no. 346.*

12.82 » Berlin (Löbbecke Coll.); *no. 358.*

12.80 » Florence (Migliarini, 1023); *no. 331.*

12.80 » Florence (Migliarini, 1023).

12.75 » Copenhagen (Ramus, 12); *no. 344.*

12.70 » Berlin (Vermächtnis H. Dressel); *no. 329.*

12.70 » Cambridge (Bunbury Coll., 371); *no. 332.*

12.70 » Copenhagen (Coll. Pontoppidan 1907).

12.52 » Berlin (Imhoof-Blumer Coll.); *no. 321.*

12.35 » Florence (Migliarini, 1023); *no. 361.*

12.32 » London; *no. 303.*

12.30 » Florence (Migliarini, 1022); *no. 324.*

12.26 » Stockholm; *no. 308 a.*

12.24 » London; *no. 350.*

12.15 » Naples (Fiorelli, 4625); *no. 304.*

12.08 » Munich; *no. 334 a.*

12.07 » Copenhagen (Ramus, 11); *no. 342.*

- 12.05 gr. Glasgow (Hunterian Coll., MacDonald, 20); *no. 345.*
- 11.90 » Cambridge (McClellan Coll., Grose, 2434, Pl. 81, 15).
- 11.8 » Syracuse; *no. 357 β.*
- 11.77 » Cambridge (General Coll.); *no. 314.*
- 11.76 » Munich.
- 11.70 » Cambridge (McClellan Coll., Grose, 2433, Pl. 81, 14).
- 11.70 » Palermo (Gabrici, p. 150, 31).
- 11.66 » Glasgow (Hunterian Coll., MacDonald, 21); *no. 323.*
- 11.62 » Naples (Coll. Santangelo, Fiorelli, 7942).
- 11.61 » Palermo (Gabrici, p. 149, 22).
- 11.60 » London (BMC Sicily, p. 111, 27); *no. 328.*
- 11.56 » Palermo (Gabrici, p. 149, 23).
- 11.51 » Munich; *no. 306.*
- 11.50 » Paris (Coll. de Luynes, Babelon, 1031).
- 11.47 » London (BMC Sicily, p. 111, 26).
- 11.44 » Cambridge (General Coll.); *no. 341.*
- 11.41 » Vienna; *no. 307.*
- 11.4 » Syracuse; *no. 308 β.*
- 11.33 » Berlin (Friedländer Coll.); *no. 317.*
- 11.30 » Winterthur.
- 11.30 » Palermo (Gabrici, p. 150, 32).
- 11.30 » Palermo (Gabrici, p. 149, 24).
- 11.30 » Cambridge (General Coll.); *no. 313.*
- 11.25 » Naples (Fiorelli, 4623); *no. 305.*
- 11.23 » Cambridge (General Coll.); *no. 335.*
- 11.22 » Vienna; *no. 348.*
- 11.21 » London; *no. 310.*
- 11.2 » Syracuse; *no. 333.*
- 11.15 » Glasgow (Hunterian Coll., MacDonald, 19); *no. 351.*
- 11.10 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 25).
- 11.10 » Palermo (Gabrici, p. 150, 29, Pl. VII, 25 b).
- 11.07 » Berlin (v. Rauch Coll.).
- 11.07 » Palermo (Gabrici, p. 149, 25).
- 11.0 » Syracuse; *no. 316 β.*
- 10.98 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 5).
- 10.95 » Munich.

- 10.84 gr. Cambridge (McClellan Coll., Grose, 2435); *no.* 340.
 10.82 » London (BMC Sicily, p. 111, 30); *no.* 363.
 10.79 » Cambridge (Gutteridge Gift).
 10.70 » Munich; *no.* 349.
 10.69 » Palermo (Gabrici, p. 150, 27).
 10.67 » Cambridge (McClellan Coll., Grose, 2436); *no.* 347.
 10.63 » Munich.
 10.60 » Munich; *no.* 325.
 10.55 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 6).
 10.45 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 28).
 10.45 » Copenhagen (C. VIII. Falbe, Nauplia-Athens 1834—35);
no. 338.
 10.44 » Cambridge (Leake, Isl., 64, 1); *no.* 315.
 10.42 » Paris (Coll. de Luynes, Babelon, 1030, Pl. XXXVIII);
no. 356.
 10.42 » Munich; *no.* 336.
 10.41 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 22).
 10.40 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 21).
 10.37 » Munich; *no.* 337.
 10.32 » Copenhagen; *no.* 326.
 10.30 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 12).
 10.27 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 18).
 10.25 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 20).
 10.24 » Palermo (Gabrici, p. 150, 33).
 10.24 » London (BMC Sicily, p. 111, 28); *no.* 343.
 10.22 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 19).
 10.21 » Berlin (Imhoof-Blumer Coll.); *no.* 320.
 10.20 » Winterthur; *no.* 362.
 10.20 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 26).
 10.16 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 13).
 10.13 » Cambridge (McClellan Coll., Grose, 2437); *no.* 354.
 10.11 » London (BMC Sicily, p. 111, 25); *no.* 319.
 10.10 » Palermo (Gabrici, p. 150, 26, Pl. VII, 25 a).
 10.06 » Vienna.
 10.05 » Naples (Fiorelli, 4624); *no.* 318.
 9.99 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 4).

- 9.92 gr. Berlin; *no.* 360.
 9.82 » Copenhagen (Ramus, 13).
 9.82 » Pennisi; *no.* 309.
 9.79 » Berlin; *no.* 312.
 9.79 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 24).
 9.74 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 17).
 9.73 » Munich.
 9.71 » Cambridge (McClean Coll., Grose, 2438, Pl. 82, 1);
no. 364.
 9.67 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 15).
 9.60 » Palermo (Gabrici, p. 150, 30).
 9.55 » Winterthur.
 9.52 » Naples (Coll. Santangelo, Fiorelli, 7943); *no.* 355.
 9.46 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 30).
 9.43 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 10).
 9.4 » Syracuse; *no.* 330.
 9.26 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 11).
 9.15 » Milan (Racc. Braidense); *no.* 316 a.
 8.98 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 14).
 8.84 » Vienna; *no.* 327.
 8.82 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 9).
 8.79 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 8).
 8.34 » Vienna.
 8.27 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 7).
 8.10 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 16).
 8.10 » Glasgow (Hunterian Coll., MacDonald, 22); *no.* 339.
 7.94 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 27).
 7.92 » Munich; *no.* 334 β .
 7.31 » Cambridge (General Coll.).

Plates XXXVII—XLIII

10.91 gr. (124 specimens).

SERIES XVII

Group A, Two chalkoi.

- 9.12 gr. Palermo (Gabrici, p. 151, 57).
 8.89 » Berlin (Löbbecke Coll.); *no.* 369.

- 8.72 gr. Berlin (Fox Coll.); *no. 370*.
 8.56 » Copenhagen (C. VIII. Rollin); *no. 367*.
 8.45 » Berlin (Imhoof-Blumer Coll.); *no. 365*.
 8.38 » Munich.
 8.30 » Florence (Migliarini, 1038).
 8.27 » Florence (Migliarini, 1037).
 8.10 » Glasgow (Hunterian Coll., MacDonald, 32, Pl. XV, 3);
no. 366.
 7.86 » Munich.
 7.70 » Cambridge (Hay Coll., 245); *no. 368*.
 7.50 » Naples (Fiorelli, 4633).
 7.10 » Cambridge (McClellan Coll., Grose, 2452, Pl. 82, 9).
 7.02 » Catania (De Agostino, ASSO Ser. 2 XI, p. 145, 69,
 Pl. I, 14).
 6.95 » Naples (Fiorelli, 4634).
 6.70 » Palermo (Gabrici, p. 151, 58).
Plate XLIV 7.98 gr. (16 specimens).

SERIES XVIII

Group A, Five ounces.

- 18.16 gr. London; *no. 375*.
 18.03 » Stockholm; *no. 372*.
 17.08 » Pennisi; *no. 373*.
 15.84 » Berlin (Löbbecke Coll.); *no. 374*.
 15.07 » Paris (Coll. de Luynes, Babelon, 1029, Pl. XXXVIII);
no. 371.
 14.45 » Copenhagen (C. VIII. Falbe, Paris 1833); Imhoof-Blumer,
 Monnaies grecques, p. 22, 39, Pl. B 6; Gabrici, p. 100);
no. 376.
Plate XLV 16.44 gr. (6 specimens).

Group B, Three ounces.

- 13.22 gr. London (BMC Sicily, p. 112, 41); *no. 377*.
 11.01 » Palermo (Gabrici, p. 148, 2, Pl. VII, 31); *no. 379*.

- 10.71 gr. Cambridge (Leake, Isl., p. 64, 6); *no.* 380.
 10.20 » Chiaramonte-Bordonaro (738); *no.* 378.
 9.98 » Vienna; *no.* 381.

Plate XLVI

11.02 gr. (5 specimens).

SERIES XIX.

Group A, Three ounces.

- 8.65 gr. Berlin (Imhoof-Blumer Coll.).
 8.15 » Berlin; *no.* 386.
 8.00 » Munich.
 7.97 » Glasgow (Hunterian Coll., MacDonald, 31); *no.* 383.
 7.65 » Naples (Fiorelli, 4632).
 7.59 » Catania (De Agostino, ASSO Ser. 2 XI, p. 145, 68).
 7.36 » Cambridge (McClellan Coll., Grose, 2447, Pl. 82, 6).
 7.32 » Berlin (Imhoof-Blumer Coll.); *no.* 387.
 7.19 » London (BMC Sicily, p. 113, 45); *no.* 390.
 7.17 » Berlin (Peytrignet Coll.); *no.* 389.
 7.15 » Berlin (v. Rauch Coll.).
 7.15 » Copenhagen (C. VIII. Arditi, Naples); *no.* 384.
 7.00 » London (BMC Sicily, p. 113, 44); *no.* 391.
 6.83 » Catania (De Agostino, ASSO Ser. 2 XI, p. 145, 63).
 6.80 » Palermo (Gabrici, p. 150, 52).
 6.70 » Munich.
 6.7 » Syracuse; *no.* 382.
 6.69 » Berlin (Fox Coll.); *no.* 385.
 6.47 » Catania (De Agostino, ASSO Ser. 2 XI, p. 145, 64).
 6.45 » Catania (De Agostino, ASSO Ser. 2 XI, p. 145, 65).
 6.45 » Berlin; *no.* 388.
 5.88 » Catania (De Agostino, ASSO Ser. 2 XI, p. 145, 66).
 5.82 » Catania (De Agostino, ASSO Ser. 2 XI, p. 145, 67).
 6.30 » Copenhagen (Ramus, 22).
 6.26 » Vienna.

Plate XLVII

7.03 gr. (25 specimens).

SERIES XX

Group A, Six ounces,

- 10.20 gr. Munich.
 10.00 » Naples (Fiorelli, 4627).
 9.85 » London (BMC Sicily, p. 113, 42); *no.* 395.
 9.80 » Berlin (Imhoof-Blumer Coll., Imhoof-Blumer, Berl. Bl., V, p. 51, 5); Gabrici, p. 87.
 9.76 » Ryolo.
 9.42 » Cambridge (General Coll.).
 9.38 » Palermo (Gabrici, p. 87; p. 150, 51).
 9.3 » Syracuse; *no.* 397.
 9.16 » Cambridge (Leake, Isl., p. 64, 7); *no.* 393.
 8.97 » Munich.
 8.75 » Berlin (v. Rauch Coll.); *no.* 394.
 8.75 » London (BMC Sicily, p. 113, 43); *no.* 399.
 8.62 » Naples (Fiorelli, 4630); *no.* 398.
 8.35 » Copenhagen (C. VIII. Münter, 1085).
 8.25 » Naples (Fiorelli, 4628).
 7.87 » Berlin; *no.* 392.
 7.69 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 62, Pl. I, 13).
 7.65 » Naples (Fiorelli, 4631); *no.* 396.
 7.57 » Munich.
 7.05 » Naples (Fiorelli, 4629).

Plate XLVIII

8.82 gr. (20 specimens).

SERIES XXI

Group A, Four ounces.

- 6.70 gr. Berlin (Imhoof-Blumer Coll.); *no.* 402.
 5.95 » Berlin (Imhoof-Blumer Coll.); *no.* 403.
 5.69 » Berlin (Fox Coll.); *no.* 400.
 5.51 » Glasgow (Hunterian Coll., MacDonald, III, Addenda, p. 742); *no.* 401.
 4.80 » Winterthur; *no.* 404.

Plate XLIX

5.73 gr. (5 specimens).

SERIES XXII

Group A, Pentonkion.

- 5.08 gr. Copenhagen (C. VIII. Rollin).
 5.04 » Vienna; *no. 413*.
 5.02 » Berlin (Löbbecke Coll.); *no. 415*.
 4.97 » Berlin.
 4.85 » Milan (Racc. Braidense).
 4.7 » Syracuse; *no. 406*.
 4.63 » Palermo (Gabrici, p. 151, 60).
 4.57 » Naples (Fiorelli, 4637); *no. 412*.
 4.5 » Syracuse; *no. 405*.
 4.31 » Munich; *no. 408*.
 4.19 » Cambridge (McClellan Coll., Grose, 2448, Pl. 82, 7);
no. 418.
 4.00 » Cambridge (Leake, Isl., p. 64, 8).
 3.95 » Catania (De Agostino, ASSO Ser. 2 XI, p. 144, 31).
 3.84 » Cambridge (Bunbury Coll., 372); *no. 417*.
 3.71 » Ryolo; *no. 411*.
 3.51 » Munich; *no. 407*.
 3.35 » Munich; *no. 409*.
 3.30 » London (BMC Sicily, p. 111, 31); *no. 410*.
 3.18 » Palermo (Gabrici, p. 151, 56, Pl. VII, 27).
 3.16 » Cambridge (Bunbury Coll., 372).
 3.15 » Berlin (Imhoof-Blumer Coll.); *no. 414*.
 3.04 » Berlin (Löbbecke Coll.); *no. 416*.

Plates L—LI

4.09 gr. (22 specimens).

Group B, Ounce?

- 2.05 gr. Naples (Coll. Santangelo, Fiorelli, 7997); *no. 420*.
 1.86 » Chiaramonte-Bordonaro (871); *no. 421*.
 1.8 » Syracuse; *no. 419*.

Plate LI

1.90 gr. (3 specimens).

SERIES XXIII

*Group A.*6.06 gr. Ryolo; *no.* 422.5.15 » Chiaramonte-Bordonaro (873); *no.* 423.*Plate LII*

5.61 gr. (2 specimens).

*Group B.*5.96 gr. Ryolo; *no.* 426.5.11 » Munich; *no.* 425.3.98 » Chiaramonte-Bordonaro (874); *no.* 424.*Plate LII*

5.02 gr. (3 specimens).

Group C.

4.63 gr. Palermo (Gabrici, p. 151, 60).

4.45 » Palermo (Gabrici, p. 151, 54).

4.26 » Palermo (Gabrici, p. 151, 55).

4.20 » Berlin (Imhoof-Blumer Coll.); *no.* 434.3.82 » Copenhagen (Ramus, 15); *no.* 428.

3.73 » Cambridge (McClellan Coll., Grose, 2449).

3.35 » Naples (Fiorelli, 4639); *no.* 436.3.19 » London; *no.* 430.

3.19 » Palermo (Gabrici, p. 151, 53).

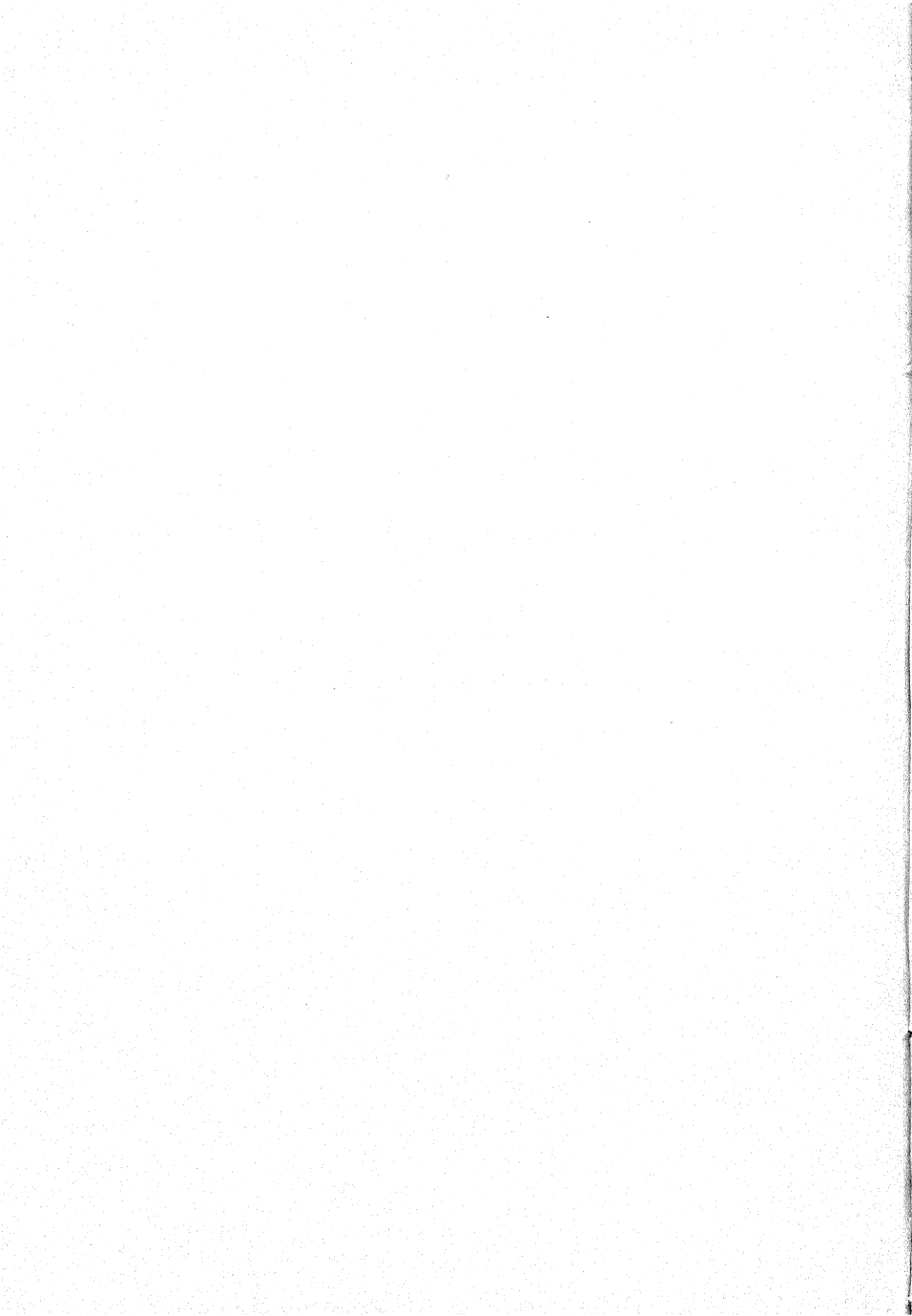
3.04 » Cambridge (McClellan Coll., Grose, 2451); *no.* 431.2.98 » Cambridge (McClellan Coll., Grose, 2450, Pl. 82, 8);
no. 432.2.95 » Naples (Fiorelli, 4638); *no.* 427.

2.77 » Cambridge (General Coll.).

2.7 » Syracuse; *no.* 435.2.7 » Syracuse; *no.* 429.2.49 » Berlin; *no.* 437.2.36 » Munich; *no.* 433.*Plate LIII*

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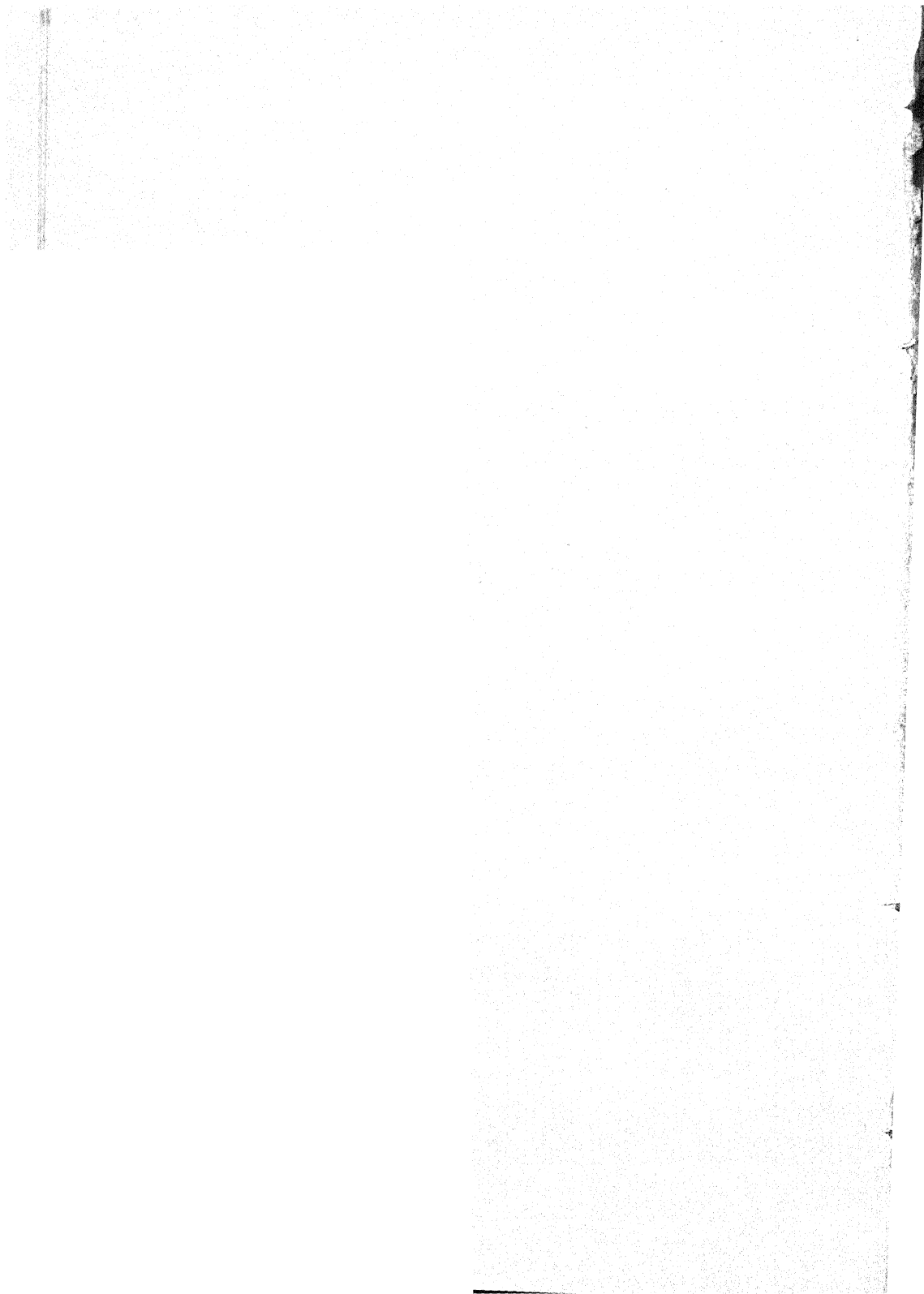
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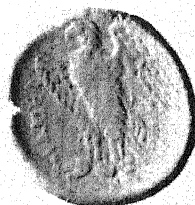
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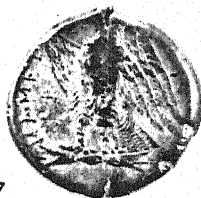
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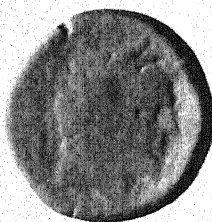
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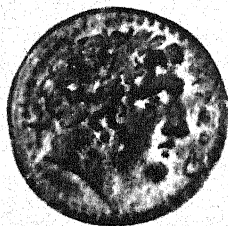
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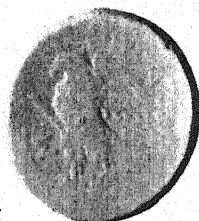
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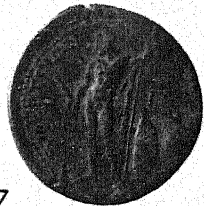
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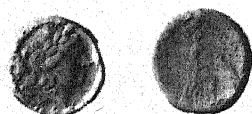
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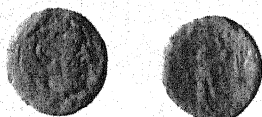
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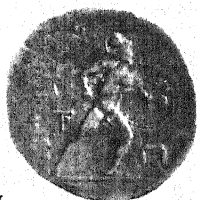
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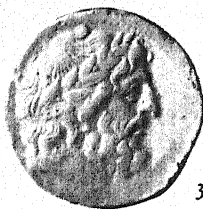
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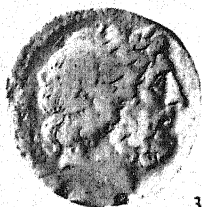
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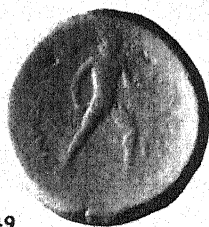
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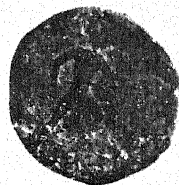
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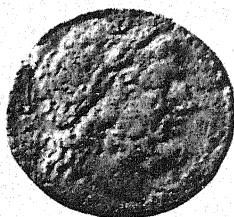
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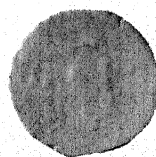
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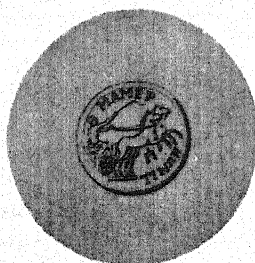
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